A Post-graduate Address
ON
THE SYMPTOMS AND SOME IMMEDIATE CONSEQUENCES OF ACUTE PNEUMONIA.

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GENTLEMEN,—In venturing to address you with a few remarks on some of the symptoms and consequences of acute pneumonia I feel that you may possibly question the propriety of my making use of such a title when the very subject-matter of my discourse will be found dealing largely with the symptoms of what may be called irregular forms of the pneumonic process. But on consideration I think many, if not all, here present this afternoon will agree with me that the mere fact of admitting irregularity of symptoms is tantamount to acknowledging our own ignorance of nature's inexorable laws. Nature knows of no such irregular methods, and, believe me, every symptom, whether it be aggravated, suppressed, or ill-defined, is but the expression of that grand law of cause and effect which underlies and actuates every step of organic life, whether or not such be for good or evil. With these few words of preface I will ask your attention to certain well-marked varieties of symptoms, which any clinical student will have abundant opportunity for watching when carefully noting the different aspects, the diverse, often conflicting, symptomatology of acute pneumonia, and its more immediate consequences.

In the spring of 1881 I was hurriedly summoned to a patient staying at one of our large London hotels. The patient, a gentleman aged thirty-five, was lying on his bed, and beside him was a basin containing about half a pint of blood, which he told me had been expectorated with cough. He had not been feeling well for a few days, but had not been prevented attending to his usual business in the City. He was on the point of starting for business when seized with the hæmorrhage, which commenced while at breakfast. During this meal he had a fit of coughing and noticed his handkerchief to be stained with blood. Retiring to the lavatory, he spat up much more, his handkerchief being soaked. I looked upon the case as one of ordinary hæmoptysis and consequently did not wish to disturb the patient by a physical examination more than was absolutely necessary. Beyond noticing some fine crepitant râles under the left clavicle, I am in ignorance as to the condition of the lung at the time of my visit. One point, however, attracted my attention; I noticed the heat of the patient's hand, and, taking his temperature, it was found to be 101° F. In all the previous cases of hæmoptysis that had been under my observation a depressed, usually subnormal, temperature had been invariably remarked. With regard to the previous history of this case I learnt that three days before the attack of hæmorrhage, feeling out of sorts, he had consulted the late Sir William Gull, with whom I communicated, and was informed by him that he had carefully examined the patient's chest, and that at the time of the interview he considered it as being perfectly sound, the symptoms for which his advice was sought being those of an ordinary catarrh. Sir William Gull met me in consultation on the afternoon of the day on which the hæmoptysis occurred, and he suggested that the hæmorrhage was pneumonic, the area of inflammation being in the upper lobe of the left lung. The following day the chest was carefully examined. Posteriorly, on the left side, there was evident consolidation of the upper portion of lung; there was loss of resonance over the entire supra-spinous region, the dulness extending to a little below the spine of the scapula. The breath sounds over this area were loud and distinct, scarcely tubular, but when compared with the other side very markedly different. Vocal resonance was much increased. The constitutional symptoms remained the same, the temperature being from 101° to 102°; the hæmorrhage had decreased. The illness lasted seven days, by the end of which time the temperature had fallen to normal and the expectoration had almost ceased. The latter had passed through various stages of pigmentation, from that which was bright crimson and frothy to a dark prune-juice-coloured sputum. The physical condition of the chest also showed improvement. There had been but slight increase in the total area affected; the dulness was not so marked; and by the time the patient was well there was but little, if any, trace left of the local mischief. From first to last I was extremely interested in the clinical phenomena presented by this patient. As I have before stated, it was new to me to find hæmoptysis accompanied by a high temperature, this increase of temperature being concomitant with the initial attack. Taken all in all, the case appeared to present many different aspects to those usually present with hæmorrhage arising from the pulmonary area, and I determined to pay special attention to all those instances of hæmoptysis which might subsequently come under my own observation, my intention being to try to ascertain if there was any connexion, direct or indirect, between the inflammation of the upper lobe of the lungs and hæmoptysis.

During the four subsequent years several cases of hæmoptysis came under my care, either at the West London or North-West London Hospital. Without any exception, I found that in each individual case, when the hæmorrhage was accompanied with increase of temperature, there was distinct evidence of pneumonia of one or the other apex. In a short communication to THE LANCET[1] I placed five of such cases on record, and I will now, with your permission, bring before you the result of my further investigations in the clinical history of hæmoptysis when accompanied with raised temperature, and, as I believe, almost invariably complicated with more or less pneumonic consolidation of the upper lobe of the right or left lung. With regard to the state of the temperature in ordinary hæmoptysis there do not exist two opinions, and I think it may be stated with absolute accuracy that before and during the actual hæmorrhage the body heat is, in by far the largest majority of cases, below normal. The class of case to which my remarks refer is fairly illustrated by the description very briefly alluded to at the commencement. Here was a patient, presumably in good general health, who within a few hours of the initial attack of hæmorrhage had been seen and carefully examined by one of the most astute clinical observers of the day. The patient's chest was considered normal, but within a short period of the examination he was suddenly seized with profuse hæmorrhage, the attack being accompanied with high temperature and all the physical symptoms pathognomonic of acute pneumonia of one lung. Moreover, in other respects the attack simulated in every particular the common ordinary symptoms of pneumonia. The consolidation passed away, and, as far as physical symptoms could help in giving us data for an opinion, the lung perfectly recovered from the inflammatory seizure. I say advisedly that the physical symptoms denoted restoration of the normal texture of pulmonary tissue. I do not for a moment intend that my remarks should lead you to think that I do not attach the gravest importance to such a marked symptom as hæmoptysis, whether it be caused, as I believe to be the case, by a hyperæmia accompanying pneumonic consolidation, or merely arising as a consequence of a more decided tissue degeneration. Since the time of Hippocrates hæmoptysis has rightly been looked upon as a symptom of gravity. In the cases I now allude to, the symptom does not lose its significance. I cannot say whether, at the period of hæmorrhage, the fatal bacillus has or has not taken up its abode in the tissues of the "host"; but I can say that such a complication of apex pneumonia would lead one to infer that the "soil" for its growth and sustenance is either ready prepared or only waiting some further development.

I will now proceed to give some brief notes of a few cases which appear to me to support the opinion I hold that apex pneumonia is liable to be accompanied with hæmorrhage sufficient in amount to be dignified by the term "hæmoptysis."

CASE 1.—A man twenty-one years of age was admitted under my care into the North-West London Hospital on July 6th, 1887. The patient had been in good health up to two days before admission, when he considered he had caught cold and suffered from an irritating cough. The evening before admission he spat up blood and was admitted as a case of hæmoptysis. The hæmorrhage amounted to several ounces; it was mixed with sputa and was of a

[1] THE LANCET, June 19th, 1886.

bright colour. The temperature on admission was 101·5° F. and remained above 100° till the eighth day of illness; on the morning of that day it fell to 98°; rising again slightly for a few days more, it assumed its normal range. The hæmorrhage, rather profuse for the first forty-eight hours, gradually ceased, and the colour of the blood darkened. A physical examination of the patient's chest disclosed consolidation of the right apex, which was looked upon as being pneumonic. It rapidly cleared up and at the patient's discharge there was no appreciable difference, as far as auscultation and percussion assisted us in giving an opinion, between one side of the chest and the other. Two years after this patient left the hospital he applied to me at my own house in reference to a life assurance. I examined him at that time and could detect nothing wrong with either lung. He was also examined by the medical officer attached to the insurance office, and his life was accepted. Again, three years after the interview I saw this patient; he was then dying from chronic pneumonia which had followed a severe attack of epidemic influenza.

CASE 2.—A man forty-one years of age was admitted into the North-West London Hospital on June 19th, 1890. He was then suffering from rather profuse hæmoptysis, which had commenced on the morning of admission and continued during the day, two ordinary spittoons being filled with sputum mixed largely with bright blood. The temperature was noted as being 101·4° F. It remained high for the succeeding eight days It gradually fell and practically remained normal till discharge. He was under observation in the hospital for twenty-eight days. Thus for three-fourths of this period there was but very slight fluctuation in the temperature. During the first day or so of illness, in consequence of profuse hæmorrhage, no very exact physical examination of the chest was made. When the condition of the patient permitted it, the right upper lobe was found to be consolidated. There was marked dulness over and above the spine of the scapula, tubular breathing being heard over this region. A few days later all signs of consolidation were gone, and when the patient was discharged there was no appreciable difference between the two lungs.

The following report is the case of a patient who—from family and past history—had evidently been the subject of slight chest mischief for some time. He was suffering on admission into hospital from a small patch of pneumonic consolidation at the right apex.

CASE 3.—A man thirty-five years of age, while at work, spat up a large quantity of blood-stained sputum. On admission into the North-West London Hospital on May 28th, 1890, he was noted as being well nourished and an apparently healthy man. He was coughing up blood, and the hæmoptysis continued for about forty-eight hours; the blood was intimately mixed with sputa The temperature on admission was 101·6°; on the sixth day of illness it was normal, remaining so during the time the patient continued in the hospital—nineteen days. The physical symptoms were dulness and tubular breathing at the right upper lung, these symptoms being followed by moist râles, which gradually subsided. At the date of discharge there were no physical symptoms denoting pulmonary mischief.

The case I shall next refer to is of interest as showing how an initial pneumonia of the apex may be accompanied with sharp hæmorrhage, all symptoms subsiding and the lung mischief remaining quiescent for many years.

CASE 4.—In October, 1885, a man consulted me for pain—probably pleurodynia—in the left intercostal region. He stated that some time previously he had suffered from a severe attack of hæmorrhage from the lungs, and that at the time of the illness he had inflammation of the upper part of the left lung. He named a leading physician as his regular medical attendant, and I had no doubt but that the account he gave of the illness was substantially correct. The statement of pain, I believe, was made with a view to having the chest examined and a statement given him as to the amount of mischief which had been considered as left subsequent to the attack of pneumonia. The patient was strongly developed, muscular, and well nourished, the only physical symptom I could detect being a slight localised area of dulness below the left clavicle; the respiratory murmur over the spot was harsh. A year later I again examined the patient, the physical symptoms being in every way the same. The general health was extremely good; there had been no new symptoms denoting chest disease. After another interval of six months the chest was examined again with negative results. In November, 1888, being three years after the first interview, I was suspicious of there being some fresh mischief; there were then to be heard some moist sounds over the left apex, but this catarrh completely cleared up, and I next saw the patient in January, 1892, for an attack of epidemic influenza, which he passed through without any lung complication. During this illness the chest was carefully examined, and I could not satisfy myself that there had been any material alteration in the physical symptoms since I had first examined him in 1885, rather more than seven years before. The general health had remained satisfactory in every way; his weight had increased. Severe fatigue could be indulged in without any subsequent ill effect.

I have noted many more instances in which a pneumonia of one or other apex has been accompanied by a hæmorrhage more or less severe, and without any exception each case had been considered as essentially one of hæmoptysis, the hæmorrhage being the most prominent symptom of the attack. In each case the hæmorrhage was complicated with an increased temperature of three or four degrees. I believe these cases are essentially different from the periodic slight attacks of hæmoptysis which so many phthisical patients suffer from, which attacks may be accompanied or followed by a slightly raised temperature; but pyrexia with them is usually more or less constant and is a part of the complaint from which they suffer. I have no doubt that many of such incidental outbreaks are caused by small local patches of pneumonia complicating the downward path of the phthisical patient.

The class of case to which I especially invite your attention differs from these in many particulars. It frequently happens that the initial hæmorrhage is the first sign which calls for attention; we find that this symptom is accompanied with consolidation of the upper portion of one or other lung. And further—a most important fact—the consolidation passes away as convalescence is practically established; this latter condition would appear to separate such cases from those where a phthisical pulmonary change resulting in consolidation is complicated by hæmorrhage, and in which the hæmorrhage is not followed by any diminution of the consolidated tissue. Personally, I have not seen any patients succumb to this class of hæmorrhagic pneumonia which I now describe; but some months ago, when drawing attention at the hospital to a case of apex pneumonia complicated with sharp hæmoptysis, I was informed by the house physician that during my absence in the autumn a patient had been admitted into the North-West London Hospital suffering from hæmoptysis and pyrexia. The patient died, and on making an examination after death the only discoverable lesion was a pneumonia of the right apex. If, as I believe to be the case, pneumonia of the apex is especially liable to be complicated with a sharp hæmoptysis, it will largely help to explain those cases usually styled "phthisis ab hæmoptoë," the true etiology of which is yet unsettled. In these cases the inflammatory disturbance which has given rise to the attack of hæmorrhage is overlooked, the hæmorrhage *per se* being looked upon as being the essential factor in that sequence of events terminated by pulmonary phthisis. Fagge, alluding to the pathology of these cases (phthisis ab hæmoptoë), writes: "There is, no doubt, a difficulty in saying how the bleeding is brought about, but it seems very likely that the growth of tubercle in the walls of the alveoli may be attended with an invasion and softening of the coats of many of their capillaries, while at the same time the blood pressure in them is augmented in consequence of compression of other capillaries." When we consider how often a lung is studded with tubercle, and how often in such cases there is no hæmorrhage worthy of the name, we must, I think, look for another cause than mere softening of the coats of the capillaries by the growth of tubercle, or indeed the compression of the vessels. On the other hand, when we take into consideration the enormous hyperæmia which attends inflammation of lung tissue a ready explanation of the hæmorrhage at once presents itself. It is a hæmorrhage concomitant with the well-known initial stage of pneumonia—the stage of engorgement. I believe that the anatomy of the part still further adds to the liability to hæmorrhage. Clinical and pathological experience supports the opinion that lesions connected with the apex are more prone to bleed than those situated in other portions of the pulmonary area. It is not difficult to understand how many of these cases of apex pneumonia, complicated with hæmoptysis, are overlooked with regard to their true etiology. Given hæmoptysis as the prominent symptom of the attack, with physicians as with laity, the fundamental principle of treatment is complete rest, especially rest and

quiet of the affected organ. It follows that the chest is but rarely examined with that care and refinement which would be used had the hæmorrhage been absent. In these cases the posterior portion of the lungs is but infrequently examined, and the physical sign of a pneumonia occupying but a small focus is consequently overlooked.

Before leaving the subject of apex pneumonia, considered with regard to special, peculiar, and irregular symptoms, I wish to draw your attention to those very anomalous, ambiguous cases, where an apex pneumonia occurring in early child life is accompanied with such marked cerebral symptoms that the pulmonary mischief is masked and is liable to be misinterpreted, such cases having been frequently mistaken for meningitis.

"Brain fever" is a disease which at the present date is relegated to the novelist, but from the point of view of the superficial observer there is scarcely any class of case which, from the intensity of the nervous disturbance, is more likely to be regarded as cerebral than that of a pneumonia of the apex of a neurotic child. In discussing these interesting cases[2] Henoch remarks: "The latency of the physical symptoms, which may last from four to six days, may, along with the prominence of the cerebral and gastric symptoms, readily lead to the mistaken diagnosis of meningitis or of typhoid fever, or even of an intermittent fever, as I experienced in one case. Perhaps in such cases the pneumonia spreads gradually from the centre to the periphery, and only when it has reached this situation do the signs of consolidation appear distinctly. Whenever this does take place the gastric or cerebral symptoms which have hitherto been prominent usually now become less so, and the diagnosis at once becomes clear; but in some cases not until the fever is distinctly on the decline, or may even have ended critically." Personally, I think the cerebral symptoms often prevent a very accurate examination of the chest being made, the evidence of consolidation being overlooked. Moreover, in many instances the area of inflammatory trouble is exceedingly small. The following case will be found to present most of the clinical features which attend inflammation of the apex when complicated with nerve symptoms.

CASE 5.—A child aged two years was taken ill on May 26th, 1885, the first symptoms being great restlessness, screaming, intolerance of light, and twitching of the face and upper extremities; the temperature was 104·2° F. Meningitis was diagnosed and the opinion was supported by a specialist in diseases of children. Two days later Sir William Gull saw the little patient and considered the cause of the attack to be gastric. On the fifth day of illness I first saw the child and found that at this time there was distinct evidence of consolidation of the right apex. Over this portion of the chest there were dulness on percussion, tubular breathing, and increased vocal resonance. There was a short irritating cough. The temperature had fallen critically to below normal and all the nervous symptoms had disappeared. The cough gradually became less irritating, but as it lessened in frequency it began to assume paroxysmal characters, was more pronounced during the night, and was evidently assuming the symptoms of whooping-cough. The case resolved itself into one of that disease, commencing with an acute onset and complicated by a well-defined lobar pneumonia. The physical symptoms connected with it decreased in the usual normal manner, crepitatio redux being well marked. Here the intense cerebral disturbance of the initial attack so completely masked the true pathology as to mislead three physicians, two of whom were connected with hospitals devoted to the diseases of children.

CASE 6.—A child nine years of age was admitted into the West London Hospital with a history of three days' cough, the patient being brought for advice in consequence of the extreme symptoms, which were more cerebral than pulmonary: delirium, crying out, screaming fits, restlessness, pain in the head, intolerance of light, temperature 102·2° F., and rapid breathing. Evidence of lobar pneumonia was easily demonstrated, the inflammation being limited to the extreme upper lobe of the right lung. The attack speedily passed off; on the third day after admission the temperature was subnormal and the physical signs less marked.

From my own experience I cannot affirm that the presence of very marked extreme nervous disturbance is absolutely opposed to a diagnosis of meningitis. Doubtless in by far the larger majority of cases these extreme symptoms contraindicate meningitic mischief, and a child suffering from delirium, twitching of face and limbs, screaming, and intolerance of light, especially when such symptoms are accompanied with high temperature and rapid respiration, is probably the subject of lobar pneumonia or simple gastric disorder.

The following is a typical example of an acute onset of tuberculous meningitis.

CASE 7.—A young child was admitted under my care to the North-West London Hospital in June, 1889. He presented all the aspects, all the clinical conditions, which I have endeavoured to describe. At my first visit the restlessness and screaming were so great that I found a detailed examination impossible. From these symptoms alone I ventured a diagnosis of pneumonia, and stated that the violence of cerebral disturbance negatived brain mischief. But as the violent initial stage passed off characteristic symptoms of meningitis supervened; the little patient became lethargic, convulsions ensued, and post-mortem examination proved the condition to have been one of uncomplicated tuberculous meningitis.

The initial symptoms of a pronounced attack of lobar pneumonia may for some days be altogether wanting in character; in other words, we may happen to see a patient severely ill, with marked constitutional disturbance, high fever, flushed face, rapid breathing, &c., but in whom we can find no local lung lesion sufficient to satisfactorily account for the symptoms. After a few days these local symptoms appear and declare the nature of the illness. In an article in one of the medical journals upon pneumonia attention was called to such cases, the writer referring to them as good instances of "the specific nature of pneumonia apart from its inflammatory origin." I made a note of the remarks, but unfortunately have mislaid the source whence they were taken. "We think the balance of evidence is strongly against the theory which professes to explain the disease (pneumonia) as simply a local inflammation. Often the pyrexia period has run most of its course with great severity before the most careful physical examination of the chest yields any results. A case occurred recently in our experience where the disease began in a typical form and with a profuse herpetic eruption; but an examination on three successive days by three hospital physicians, all on the look-out for the disease, proved quite fruitless. On the fourth day the physical symptoms developed in the usual way." I would urge that such cases are very far from rare, and, without expressing an opinion as to whether they do suggest the specific nature of pneumonia or not, I believe this anomalous development of physical symptoms to be capable of a very simple solution—namely, that the starting point of the inflammatory area is deeply buried in the lung. The inflammatory lesion gradually reaches the periphery, and as it does so the usual physical symptoms become manifest and capable of demonstration. A striking instance of this kind came under my notice some four years ago.

CASE 8.—The patient, a woman, had been acutely ill for about four days, her symptoms being fever, delirium, quick pulse, rapid breathing, and that which further added to the difficulty of exact diagnosis—a rather frequent diarrhœa, with typhoid-looking stools; in fact, the symptoms might have been described as those typical of typhoid fever. I examined the case very carefully in conjunction with her medical man, and we both came to the conclusion that the disease was probably typhoid fever, with, perhaps, more sudden onset than is usual in that fever. Our consultation was late in the evening—about 11 P.M. I slept in the house, and in the early morning I was roused to see the patient, who was thought to be not so well. Examining the chest at that hour, I was surprised to find most distinct tubular breathing over the middle lobe of the left lung, where it certainly had not existed six hours before. From that time the symptoms were in all respects those of pneumonia, both lungs being involved. A similar experience befell me but a few months past. Here the patient was under the care of an experienced, watchful practitioner, who was fully alive as to the probable nature of the illness. The chest had been examined with the greatest care during the preceding four days; it had not been on the morning of our consultation, but at that time distinct bronchial breathing was present, and the subsequent course was normal in every respect. The illness, puzzling as regarded its premonitory symptoms, now assumed a typical character. I should also feel inclined to place in the same category—that is, among cases of concealed or latent pneumonia—those in which the course is much shorter than usual; the onset, sharp, severe, and distinct, points clearly to implication of the pulmonary area,

[2] Lectures on Children's Diseases, vol. i., p. 413, Trans. Syd. Soc.

but from the very brief duration of marked symptoms we are apt to infer that a faulty diagnosis has been made. The following illustrates the class of case referred to.

CASE 9.—On June 2nd, 1888, I saw a man forty-nine years of age. He had been feeling unwell for two or three days, the principal symptoms being headache, shivering, anorexia, and some little cough. On the evening of the above date I found a quick pulse and rapid respiration; hot, dry skin, with temperature of 103° F. There was a constant irritating cough without any expectoration. The chest was examined with the greatest care, but with negative results; I could not detect any physical symptoms. The following morning the temperature had dropped to 99°, respiration being now 20 and the pulse 80. On listening to the chest, over a very limited area below the spine of the scapula fine crepitant râles could be heard. No tubular breathing was detected, and on percussion the resonance appeared to be normal. The following day the sounds to be heard over this region were decidedly of looser character; that is, fine crepitations were replaced by moist râles, and these sounds were absolutely limited to the spot I have mentioned. On the fifth day of illness the temperature was subnormal, respiration 16, and pulse 58. There were now no abnormal physical symptoms. The case interested me, as I believed it to have been a very slight attack of pneumonia, probably limited to a very small amount of lung tissue. All the early symptoms pointed to pulmonary trouble; the cough, dry skin, high temperature, rigor and headache suggested pneumonia, and the falling critical temperature with moist sounds over a very limited area would appear to endorse the correctness of the diagnosis. The moist sounds I believe to have been entirely redux in character, and there apparently was not sufficient tissue implicated in the attack to give rise to any appreciable expectoration.

I presume that it is far from improbable that occasionally a small patch of lobar pneumonia may occur deeply seated in either lung, and that the inflammation does not extend materially beyond the primarily affected area. Surely in such a case the constitutional disturbance will be far more severe than can be explained by any discoverable physical symptoms.

Perhaps one of the most striking symptoms which accompany the phenomena of acute pneumonia is the crisis, this symptom being "almost peculiar to the disease" (Wilson Fox). To my mind there is scarcely any occurrence met with in clinical medicine more striking than this sudden termination of the most pronounced febrile condition dependent upon a local inflammatory lesion. It will be well to consider some of the more important clinical features which attend critical termination of pneumonic inflammation. I believe it would well repay renewed investigation to try to ascertain if there is any relation between the amount of tissue involved and the length of the inflammatory fever. It would certainly appear, from a comparison of slight with severe cases, that, *cæteris paribus*, the smaller the amount of pneumonic inflammation the earlier will the consequent inflammatory fever subside. A slight attack of pneumonia with but a small mass of lung involved will without doubt end critically on an earlier day than a serious attack in which nearly the whole of one lung is implicated. Fully aware as I am of the unorthodox proposition I am guilty of, I feel convinced that some such relation does exist, and that if we had better means for estimating the amount of lung tissue involved in the attack we should be in a position to affirm that the crisis is invariably determinable by the amount—i.e., mass—of pneumonic inflammation; in other words, the period of inflammatory fever is directly proportional to the amount of tissue involved. What are the conditions which materially affect the period of crisis? Some at least we know well from clinical experience. Without being exhaustive, I would name the following complications as impeding crisis. Pericarditis occurring during the course of a pneumonia will keep up the pyrexia and will mask the critical fall. The same may be said of pleurisy, especially when purulent. If during an attack of pneumonia limited to one side the other lung should become affected the critical stage is delayed, and, as far as my experience serves me, the phenomenon of crisis is rarely so pronounced. Again, should a lobar pneumonia be followed by bronchitis or catarrhal inflammation, an event which occasionally happens in the case of children, the crisis is absent.

There are numerous other conditions which materially influence the crisis; and from a survey of all the ordinary phenomena accompanying or preceding this striking event we may with justice assume that the act of crisis is absolutely dependent upon the specificity of the inflammation. The anatomical condition of the affected lung cannot materially change within the few hours preceding the crisis, and yet what a striking change does take place in the condition of the patient. The pulse, temperature, and respiration all subside. Tranquility succeeds turmoil; the intense physiological storm is quelled as if by a magic wand. This influence surely is apart from the ordinary phenomena of inflammation; there must be some specific action to account for the marvellous change. Do we meet with any parallel condition excepting as the result of the death of a living organism? Clinical study will strongly confirm the opinion held by many that acute pneumonia may have a variety of causes, and whether we do or do not consider the presence of a specific organism as essential to the process we must all recognise the important part which "soil" must have to play in cultivating any specific bacillus. Certainly, to my mind, the peculiar cessation of pyrexia, the sudden termination of those toxic symptoms which occur during the course of acute pneumonia, is most markedly suggestive of the life history of a pernicious organism which, by invading a portion of the pulmonary area, poisons the economy, but by reason of its limitations to the definite area implicated is prevented doing more than relative harm. One can picture such a colony pouring out its poison and bringing about its own destruction by the very rapidity of increase; for the more rapid its growth the more blocked the tissue becomes, and the organism may possibly perish in the same manner as we see the yeast plant does when its pabulum is exhausted or there is more than 10 per cent. of its own secretion present in the menstruum in which it would otherwise flourish. I am afraid these speculative remarks, transcendental as they may appear to many, diverge from the path of clinical medicine; but, gentlemen, I think our clinical studies may be enriched, our imagination sharpened, by the occasional endeavour to explain some of the best-established clinical facts by the knowledge of the hour. There can be no question but that the crisis of an ordinary well-marked lobar pneumonia is and has been one of the puzzles of practical medicine, and I believe a hypothesis is strictly tenable which assumes that the phenomena of such an inflammatory attack, with its critical cessation of all active mischief, may be reasonably explained on the assumption that the physical and constitutional derangement is due to the life history of a microscopic organism.

If in what is apparently a pure uncomplicated attack of acute lobar pneumonia the critical stage is absent and resolution does not take place within reasonable time it behoves us to examine the chest with the most conscientious care. Of all the secondary conditions leading to the absence of crisis none is more common than effusion, and if we are not fully alive to this complication it is easy to drift complacently into error with regard to the true pathology of the case. The fever does not fall, the lung does not resolve; day after day it is watched, and the dulness and tubular breathing remain. Here the attack has commenced with all the characteristic features of acute pneumonia; there has been no symptom denoting that with the subsidence of the pneumonic inflammation there has been a gradual, steady effusion poured out into the corresponding pleural cavity. I think when we examine such cases, and find the suppositious pneumonic consolidation melt away and fluid taking its place, we are apt to feel uncharitable towards our neighbours. In clinical medicine it is so very easy to be wise after the event. And the patient we examine, perhaps for the first time, and in whom we find evidence of fluid when a solid lung has been supposed to exist, may have been treated with the greatest care and attention; in fact, it is often with those patients we are in the habit of seeing most frequently that such an error of diagnosis is most apt to occur. The development of the effusion may be insidious, and without any special symptoms; hence the transition from consolidated lung to pleural effusion is not recognised. But, even putting aside the primary history of such a case, the differential diagnosis between solid and fluid is not always so easy as it would appear; physical symptoms occasionally prove very misleading. Dr. Addison, in his twenty-seventh aphorism, writes: "When serous effusion is very considerable, giving rise to unequivocal bronchophony, tubular breathing, want of resonance, and vocal vibration, physical examination has repeatedly led to a mistaken belief that these signs resulted from a pneumonia or other consolidation of lung"; and I have no hesitation in affirming with equal

confidence that similar mistakes may occur even if the effusion be purulent. Of course it is quite possible for the preceding pneumonia to run its ordinary normal course and terminate by crisis, the effusion following upon the pneumonic process, but my remarks have special reference to those cases in which there is no crisis, but where the temperature either ebbs and flows or, as is sometimes the case, gradually falls to normal or but little above, the chest meanwhile showing no sign of improvement and the dulness remaining.

The following is a typical example of a pneumonia followed by purulent effusion. In the spring of last year I saw a patient in consultation who had been suffering from pneumonia for about a month. The initial attack had been severe and the symptoms usual and unequivocal. The patient was a large-framed, strongly built man forty-eight years of age. His medical attendant considered that the lung had not "cleared up," and certainly when the chest was examined the physical symptoms were strongly confirmatory of that opinion. The lesion was on the left side, which was dull, but not to that extent usually present when fluid is in quantity. Vocal resonance and tubular breathing were both very distinct. The cough was loose and constant, the temperature ranging from 100° to 103° F. The patient had a large, deep chest, and it was difficult to exactly localise the apex beat of the heart. I considered that the sounds were best heard to the right of the sternum. From the irregularity of the temperature, from the fact that there had been no crisis, and from my belief that the heart was misplaced, I felt justified in suggesting an exploration, the result being that two pints of creamy pus were withdrawn by aspiration and the patient made a rapid recovery.

We have now a female patient in the wards whose history is much the same as that just referred to.

CASE 10.—A woman twenty-six years of age was admitted into the West London Hospital on Jan. 24th, 1894. She had been ill for three weeks, having suffered from an attack of lobar pneumonia accompanied with the usual symptoms. There had been no crisis, although the temperature gradually fell; on admission it was but slightly raised and a few hours after the patient was placed in bed it was recorded as subnormal. The principal symptom was dyspnœa; the patient was in the sixth month of pregnancy. The left chest was absolutely dull, the dulness extending to the right, beyond the middle line of the sternum. Posteriorly, tubular breathing and whispering pectoriloquy were well marked; the heart, much displaced, was apparently beating below the right nipple. The patient was in such distress, the respiration being 66, that aspiration was immediately performed, rather more than two pints of sweet pus being removed. With regard to diagnosis the case presented but little difficulty, yet there were numerous points of interest. The temperature contra-indicated purulent effusion; there had been no rigor or any other symptom indicative of pus. The total duration of illness had been short; the early initial stage was that of pneumonia—a pneumonia which drifted by degrees into a vast purulent effusion with so much tension and disturbance of part I thought it best to remove the fluid by degrees. I propose to aspirate again within a few days, and possibly a third time, after which a free opening will be made.[3]

Cases in which an initial pneumonia has been followed by effusion of a purulent character are so important from the point of view of treatment that I do not scruple to refer to them. I merely touch upon the most salient points.

CASE 11.—In February, 1888, a girl eighteen years of age was admitted into the North-West London Hospital under my care, the history of attack being that she had caught cold and had had a severe shivering fit. I saw her on the afternoon of the day of her admission; her condition was pathognomonic of acute pneumonia. The respiration was 46, the temperature 104° F., and the pulse 130. The physical symptoms were but poorly marked; there were some sharp, fine crepitations over the base of the left lung; no pain, no stitch on breathing. On the following day crepitation could be heard up to the angle of the scapula, the base being now dull. From this time the patient was severely ill, so ill that an accurate, careful examination of the chest was impossible; the lower part of the right lung became implicated, and the constitutional disturbance extreme. Seven days after admission the physical conditions were as follow: on the left side were tubular breathing and bronchophony; the apex beat of the heart could not be felt, but the sounds were loudest at the left of the sternum. There had been no shivering or crisis, the temperature gradually falling. The general condition of the patient improved, and she pronounced herself as feeling much better; nevertheless the breathing continued rapid and embarrassed. At this period the balance of symptoms was in favour of the presence of fluid, though a careful physical examination failed to support that view. A few days later the girl was seen again; she expressed herself as being much more comfortable; she had slept well and taken food with appetite. The temperature was now normal, but both pulse and respiration were still rapid. Cough was frequent but unaccompanied with any expectoration; it had assumed an almost paroxysmal character. At this interview I felt certain that the heart was displaced. An aspirator withdrew a pint of sweet pus. The following day the chest was opened and two pints of pus were removed, the subsequent history being without incident.

Another case bearing on the matter under our notice occurred in my practice at the West London Hospital in March, 1888.

CASE 12.—A male patient was admitted to the West London Hospital suffering from pneumonia of ordinary intensity; there was nothing irregular in the clinical course, and the normal physical symptoms were present. There was a rather free expectoration of rusty and blood-stained sputum. On the seventh day after admission the general state of the patient was satisfactory; the attack had run an ordinary course, with the exception that there had been no crisis. The temperature had gradually fallen, and on the morning of this day was 99° F. The percussion note at the lower part of the right chest was toneless—that is, was more dull than is usually the case from pneumonic consolidation. The cough was irritating and paroxysmal; the ordinary cough of pneumonia with the viscid sputum had changed to one without any expectoration, but severe and recurring in paroxysms. A hypodermic syringe revealed the presence of fluid; a small quantity, amounting to about four ounces, was withdrawn; it proved to be pus and was sweet. The following day the temperature was normal, the cough had entirely ceased, and within a few days the patient was discharged well.

CASE 13.—Another interesting case came under my care in the West London Hospital. The patient, a finely built, muscular young fellow, was admitted for pneumonia, the primary symptom being a rigor. The constitutional symptoms were so pronounced that a very careful examination was impossible. During the first week the illness was complicated with violent maniacal delirium, and it was only with difficulty that the patient could be kept in bed. There was an abundant crop of herpes on the lip, the sputum being viscid and rusty. The clinical features were purely those of a severe lobar pneumonia. The delirious stage was followed by a sharp attack of pericarditis, which again prevented a careful examination, and it was not until the patient had been a fortnight in hospital that we were able to estimate the amount of chest mischief. Briefly the physical symptoms were as follow: the right chest was dull, tubular breathing and bronchophony well marked; the general strength of the patient had improved; the heart beats were in the normal position. The liver was not depressed and vocal fremitus could be felt over the dull area. The clinical evidence was against the presence of fluid. A week later the physical symptoms were much the same, the general state of the patient being satisfactory; the temperature, falling gradually, was now but slightly above normal. The cough, however, had entirely altered in character; it was peculiar, coming on with storm-like severity, suggesting an attack of whooping-cough; there was no expectoration. A hypodermic syringe detected pus; three pints were removed; subsequently a free opening was made and the patient made a complete recovery.

I would specially invite your attention to the peculiarity of the cough which may often attend these residual effusions. I have frequently had occasion to remark it, and now look upon it as a valuable auxiliary towards the diagnosis of fluid. It is essentially paroxysmal, commencing after movement, and is not usually followed by expectoration. I believe that such a cough following upon the symptoms of an ordinary pneumonia is pathognomonic of the presence of fluid; the fluid may be in very small quantity. In one case, that of a child, four drachms of pus were aspirated; the cough, which was akin to pertussis, ceasing upon the withdrawal of the fluid. We frequently meet with cases in which a pneumonia complicated by pleuritis is followed by abnormal dulness of the affected side of the chest. We explore the pleural cavity and no fluid is found. In many

[3] This has subsequently been done, the patient making a complete recovery.

such instances the explanation doubtless is a thickened pleura.

The following case is a very interesting and exceptional one, and proves how conflicting may be the physical symptoms of an apparently simple chest attack.

CASE 14.—A man aged thirty-eight was admitted into the North-West London Hospital on April 16th, 1891. He was severely ill, suffering from dyspnœa. He stated that a month previously he had been wet through, and had a sharp pain in the chest. He was kept in bed for nine days. Feeling better he resumed work and had been up and following his usual employment up to within a few hours of admission. The respiration was 56, the pulse 120, and the temperature 102° F.; the left chest was dull from base to apex. The physical symptoms were conflicting and equivocal, but after very careful examination the balance of clinical evidence appeared to be in favour of a large effusion. An aspirating needle was inserted in three different spots, but without obtaining any evidence of fluid. A fourth puncture produced four ounces of clear serum. The following day the right chest was also affected, and the patient died within forty-eight hours of admission. An examination disclosed a very remarkable and unusual condition, the left pleura being much thickened, the lung compressed, and the pleural cavity occupied by numerous loculi separated from one another by dense fibrous septa, some of which were at least half an inch in thickness. These loculi were filled with a clear serous fluid. The largest lay in the posterior portion of the diaphragm and contained many ounces. The course of the needle was followed; the three first punctures had plunged into the fibrous bands dividing the loculi, the fourth alone reached fluid, but unfortunately penetrated one of the smallest cavities. Apart from the peculiarities of the pathology of this case it was a remarkable fact that the patient had followed a fairly arduous occupation almost up to the day of admission. He applied for relief on account of swollen legs, which were considered as being due to gout.

When pneumonia commences in the lower lobe of either lung the inflammatory process is frequently connected with symptoms which may very easily put us off our guard. We may, under such circumstances, very readily fall into error and possibly overlook the true significance of the primary symptoms of the attack. Thus what is more common than a pleuro-pneumonia of the base of the left lung to simulate in every particular the symptoms of what might, from symptoms alone, be considered as an acute affection of the stomach?

CASE 15.—A delicate lad ten years of age was seen by me. He had been suddenly seized during the night with severe pain over the left epigastric region; this pain was accompanied with vomiting, which had been incessant for many hours. The temperature was raised, being 102° F. and the breathing was quick. During the day there was no further symptom, but on the following morning a fine crepitant crackle was to be heard at the extreme base of the left lung. A few more hours developed the nature of the illness. The chest was dull to the angle of the scapula, and a consolidated lung bore witness to the origin of a storm which, apparently, as far as symptoms were concerned, expended its primary energy on the gastric area. It is well known that pneumonia of any portion of the lung is liable to be complicated with an icteric tinge of the skin; but I must hold strongly to the view that a pneumonia commencing at the extreme base of the right lung is especially liable to be complicated with more or less jaundice. I have met with several instances where this condition has been considered as resulting from what had been called "acute febrile jaundice." I remember years ago being asked by a gentleman to call and see his son, who was ill. "You will have no trouble in finding out what is the matter with the boy," said the father, "he has got an attack of jaundice." And so undoubtedly he had, but the jaundiced state of the skin was entirely secondary to well-marked pneumonia of the right base, a pneumonia which subsequently ran an ordinary course.

CASE 16.—At the beginning of the present year I saw a young woman twenty years of age. She was suffering from gastric disturbance, nausea, headache, clay-coloured stools, bile-tinged urine, coated tongue, and slightly raised temperature. Her history of illness was very clear. Fond of skating, she had been on the ice from morning till evening for several consecutive days, taking insufficient food and getting thoroughly over-fatigued. Two days before seeing me she had got wet through, and waited at a railway station for some long time in her damp clothing. On examining the chest I must confess to having felt some surprise at finding evidence of pneumonia at the right base, a pneumonia which rapidly subsided, but was followed by a much severer attack of the left lung, which was further complicated by pleural effusion.

Some of the pneumonic conditions which occur amongst patients advanced in years are often perplexing and irregular. The exposure of but a few hours to a bitter east wind may be followed by a state of illness which is wanting in most of the characteristic symptoms of inflammation of the lungs. Rapid respiration, elevated temperature, and extreme debility may, indeed, be the principal symptoms of what proves to be within a few hours a fatal attack. In such cases the loss of strength is rapid and extreme. A physical examination of the chest is rendered difficult from this cause alone; but even if we are able to make a careful, accurate investigation, how often are the symptoms wanting in character, and we find a little loss of resonance and absence of good respiratory murmur, with some sharp crepitant râles, as the only physical evidence of the disease. Many of such cases are but congestion; they are not true pneumonia, and the condition is closely allied to that so often seen on the surface of the body, and might with perfect propriety be called "chilblains" of the lung.

It was my intention to have discussed with you some of the phenomena to be observed in the pseudo-pneumonia which so often accompanies epidemic influenza, but time does not permit me to do more than allude to the subject. Probably most of you have had the opportunity of noticing the peculiarities of this form of lung complication. I would especially refer to the insidious nature of the onset and the rapidity with which large tracts of lung tissue have been implicated in the seizure. In many cases which I have personally watched the attack has been of the nature of a lung paresis, and, judging from the physical symptoms, the state is one of rapid passive engorgement. In two instances where an examination was made after death the pneumonia was of this kind and apparently totally distinct in its true pathology from either the lobar or catarrhal form.

Address in Public Medicine.

Delivered before the British Medical Association at Bristol, Aug. 3rd, 1894,

BY SIR CHARLES A. CAMERON, M.R.C.P., F.R.C.S. IREL., D.P.H. CANTAB.,

MEDICAL OFFICER OF HEALTH OF DUBLIN.

(Concluded from p. 313.)

THE ORGANISMS IN SEWER AIR.

THE results of recent investigations in reference to the composition of sewer air seem to show that it is superior, bacteriologically at least, to ordinary air. Some of the accounts of its purity are so roseate that one might naturally conclude that a sewer outfall would be an excellent health resort. Dr. John Billings, Deputy-Surgeon-General of the United States Army, goes so far as to doubt that there is conclusive evidence to prove that sewer gases have ever produced disease. Professor Koch found only 3 to 4 micro-organisms in 100 litres of the air of a Berlin sewer, whilst the atmosphere above the sewer teemed with them. Haldane detected only 20 microbes per 100 litres of air in a Bristol unventilated sewer. In a school in Dundee Carnelly and Haldane found 1510 bacteria and 10 moulds per 10 litres; whilst in a sewer in that town the number was less than 100 micro-organisms. Mr. L. Parry Laws has recently made two investigations as to the number and kind of the organisms in the air of London sewers. He finds that they do not differ in nature from those in the atmosphere. They consist of moulds and micrococci only, whilst the sewage itself contains mostly bacilli. As sewage when quite recent rarely has a bad odour, we can easily understand that in the case of well-constructed and constantly-flushed sewers, the air in them would not differ from ordinary atmospheric air. It is the emanations from stagnant sewage in ill-kept sewers that are to be dreaded. In any case, be sewers well kept or badly kept, it seems the safer plan to prevent their gaseous contents from entering our houses. It is an old story that the

persons who work in the sewers enjoy as good health as other workmen of the same class, but recent and accurate statistics show that this is not the case. The medical department of the Paris Bureau of Public Works has shown that there is an abnormally large amount of sickness amongst the workers in sewers, and that great precautions have to be observed in order to preserve their health. In curious contrast to Koch, Carnelly, Haldane, and Laws' observations, we have quite a sensational account of an evolution of pathogenic baccilli from New York sewers, given to us by Dr. Fischer of that city. He examined bacteriologically sewer air which had passed into private and tenement houses where cases of diphtheria had occurred, and detected virulent organisms in it. In forty examinations of moist sewer air he detected, in twelve instances, pathogenic baccilli, of which some were Klebs-Löffler's diphtheria microbe, and one was the bacillus typhosus. Dr. J. Bruce Low considers that he has proved to demonstration that sewer air caused a great mortality from typhoid fever in the districts of Sheldon and East Thickley. During an epidemic of that disease in 1893 there were 224 cases and 41 deaths in a population of 10,000. Although some of the cases were caused by infected milk and exhalations from middens, the greater number were due to the entry of sewer gases into houses. Dr. Davies, medical officer of health for Plumstead, is disposed to blame the street sewer ventilators for the recent increase of diphtheria in London. Alessi has shown that the gases of putrefaction rendered animals peculiarly liable to infection from doses of typhoid cultures, which had no effect upon the great majority of animals not exposed to those gases.[1] Sewer air might have a similar action.

THE VENTILATION OF SEWERS.

No sanitary subject has been so much debated of late as that relating to the ventilation of sewers and drains. The present system allows communication between the sewers and the atmosphere, for the purpose of preventing the air in the former from acquiring a greater tension than that of the latter and also for the dilution of the sewer gases by fresh air. This system converts what were formerly sealed conduits of sewage into open sewers; but with this difference, that the emanations from the sewers are evolved through openings 100 yards or so apart, and are, therefore, concentrated at a limited number of points. From a health point of view we may regard a perfectly open sewer as obviously less objectionable than one which is open at a limited number of points. It is contended that in unventilated sewers the gases generated by decomposition of organic matter force the weak traps on house drains and pass into the houses. From my own experiments on air pressure in the Dublin sewers I have come to the conclusion that it is extremely slight when the weather is calm; if there is a strong breeze, then the pressure increases, because large volumes of air are blown into the sewers through the ventilating openings. Mr. Baldwin Latham—a great authority on sanitary engineering—and Professor Attfield say that large quantities of air entering a sewer displace equivalent amounts of foul air, which must escape somewhere.[2] Mr. Latham considers that too much stress is laid upon the subject of ventilation of sewers, and believes that it is only necessary to give the air sufficient vent to prevent pressure upon the traps of the houses. The ventilating openings in the streets are generally objected to by those who live opposite to them, and undoubtedly from some of them malodorous effluvia are noticed and often complained of. The trite remark that it is better to have the sewer effluvia in the street than in the house is, of course, quite true; but the traps on drains ought to be strong enough to prevent the sewer air from entering the house. In every town there ought to be registered plumbers as sanitary officers, whose duty should be to see that the connexions between the drains and sewers are properly made and that the traps are sufficient and efficient. I have no doubt but that in most towns much soil pollution is the result of faulty house drains leaking their contents. Bristol is, perhaps, the only one of the large towns in which the sewers remain unventilated. As they discharge their contents into a tidal river, and, therefore, are sealed for some hours daily, it might be supposed that the backing up of the sewage would cause pressure upon the air in the sewers. The medical officer and city surveyor are, however, quite satisfied to allow them to remain as they are, and deprecate every proposal to ventilate them into the street. As typhoid fever is the disease which is, as asserted, the most likely to be produced by sewer emanations, Bristol ought to have more than an average amount of the disease if the sewer ventilation theorists are correct. In 1892 I collected statistics which showed that the mean death-rate from enteric fever in the period 1887–91, in fifty large British and Irish towns, was 21·3 per 100,000. In Bristol the rate was 12·6. The highest rate was in Belfast—namely, 53·6; the lowest in Plumstead, 7·3. Five towns had smaller rates than Bristol, and forty-four had higher rates. If Bristol has made a mistake in not ventilating its sewers, it has not paid apparently any penalty, for in the period 1881–90 only one of the large towns had a lower zymotic death-rate. I should feel disposed to adopt the Bristol plan were it not that there might be difficulty, in some towns at least, in cleansing the sewers. In Dublin, before they were ventilated, great care had to be taken in allowing the men to enter them, as the air was sometimes found to be mephitic. The proposal to ventilate sewers by causing pipes from them to pass up the front of the adjacent houses is not likely to meet with much favour. The plan has been tried in Sydney, Australia, and it is stated that the sewer organisms showered down from ventilating outlets on the windows and other parts of the house. Mr. J. M'Garvie Smith, who has made those observations, recommends that sewer air should be cremated and the open grids in the streets closed. Dr. Arthur has a very unfavourable opinion of sewer air, and suggests the exit end of drains might be made to act as efficient traps by causing them to dip below the sewage level in the sewers. In narrow streets and other close places I certainly am in favour of abolishing the open grids. In cases where there are no ventilators great care should be taken to keep the sewers free by thorough flushing, and disinfectants should be occasionally put into them, especially in warm weather. Ventilating shafts and pipes are slowly superseding the grids. In wide streets shafts of considerable height should be erected, and a few of them would suffice to at least prevent pressure in the sewers, though it would not ventilate them much. Dr. Kenwood's system of cremating the gases is a good one, but, I fear, too expensive for general use. The ventilation of house drains is considered to be of even more importance than that of sewers. A trap prevents the entrance of sewer gases through the drain into the house; but on the house side of the drain it is usual to have two free openings. One of these is placed just inside the trap; the other is at the end of a pipe which passes from the drain to a point higher than the house. The idea is that pure air always enters the lower opening and passes out through the upper one, thereby ventilating the drain. It often happens that the fresh air inlet becomes a foul air outlet, for if the air in the ventilating pipe be warmer than the air in the drain the latter will not pass up to the higher opening. Very often, too, especially in the case of 4-in. bore drains, the flush from a watercloset may force foul air out through the so-called fresh air aperture. In my experience I often find these air-inlets, when situated in deep areas and other confined places, a great nuisance. If the inlets cannot be placed in proper places it is better to do without them. The ventilating pipes will certainly prevent pressure being put upon the traps, and the drains can be kept free from foul air by thorough flushing. It has occurred to me that instead of an opening for air ingress a porous, unglazed earthenware chamber might be used. We know that gases diffuse readily through plaster-of-Paris and biscuit porcelain. A vessel of this kind placed on the drain would allow air to go through it, but would not allow the passage of microbes or solid particles. It would act upon air as the Pasteur-Chamberland filter does on water. It would sterilise the foul gases of the drain. I attached to a large vessel, containing wort in rapid fermentation, a porous earthenware vessel. No pressure, or a trifling one, took place in the air in the vessel unless the connexion between it and the porous vessel was cut off; then the pressure became considerable.

PERSISTENCE OF TYPHOID FEVER AND ITS CAUSE.

Typhoid fever is not so prevalent in these countries or on the Continent as it formerly was; but it has not decreased in the same ratio as typhus fever, small-pox, and almost every other zymotic disease, except diphtheria. The general improvement in the sanitary condition of all our great towns has reduced the zymotic death-rate to nearly one-half of what it was at no distant date; but in some towns typhoid fever has not declined, and in a few it has increased. The etiology of this disease is of great interest to the sanitarian; and it has been said, perhaps not on good grounds, that the general sanitary state of a town is directly as its typhoid fever death-rate. There is a very general belief that this disease is almost

[1] Centralblatt für Bacteriologie, Band xv., No. 7.

[2] Transactions of the Seventh International Congress of Hygiene, 1891.

wholly propagated through the media of water, food, and sewer air. Whenever a case of typhoid fever occurs the condition of the sanitary accommodation and drains is the first thing to be called in question. If nothing wrong is detected in those directions, then the water is accused. If the water is found to be pure the blame is laid upon the milk. I have no doubt that localised epidemics of this disease are frequently caused by infected water or milk; but I believe that the greater number of cases arises from the *materies morbi* of the disease being absorbed from the air. Up to the present, pathogenic micro-organisms have not been frequently detected in the atmosphere, but neither have they been found, except rarely, in water or milk suspected to have produced disease. There are, however, some clear cases of detection of poisonous microbes in the air. Dr. R. Wurtz and Mr. S. Lodge proved the existence of the bacillus anthracis in air. According to Klein the bacillus of swine fever is transmitted through the atmosphere. The bacillus of tuberculosis has repeatedly been detected in the dust of rooms and therefore must have been in the air. M. Vailland relates a case in which typhoid fever was apparently propagated through the air.[3] Russian soldiers quartered in certain barracks were found to suffer much from enteric fever. A bacteriological examination of the dust in the barrack rooms resulted in the discovery of immense numbers of the bacillus typhosus. Justyn Karlinski, an authority on typhoid fever, relates that the prevalence of enteric fever in Stolac, a town in Bosnia, was due not to polluted water but to exhalations from a filthy soil. The recent epidemics of typhoid fever in Havre have formed the subject of much discussion in the French Academy of Medicine. Dr. Brouardel considers that they were mainly caused by polluted water; on the contrary, Dr. Gilbert asserts that they were chiefly due to a polluted condition of the soil. He says that in Havre the soil is not purified, the houses are not drained, and but two elements of salubrity exist—namely, pure water and undoubtedly pure milk. The effects of soil pollution on the health of a community are strikingly proved in the case of the city of Ahmedabad, Bombay Presidency, India. When the excreta of the population were deposited in the soil of the city, and kept there for an indefinite period, the death-rate averaged in 1874–80 54·75 per 1000. Then the night soil was systematically removed to points just outside the city, and in the next six years the death-rate fell to 44·74. Lastly, the excreta were removed to points some miles from the city, upon which the death-rate fell to an average of 40·43. Dr. Bertin of Nantes, whilst believing in the transmission of typhoid fever through the medium of water, points out (giving an example) that it may be caused by infected dust from filthy soils.[4] In my annual report on the health of Dublin for 1891 I gave a map showing the distribution of 1988 cases of typhoid fever in Dublin. I pointed out that on the gravels the ratio of cases to the population was 1 in 92·8, and on the clays 1 in 145·3. This proved that the clays were safer to live on as far as typhoid fever was concerned. I expressed my belief that these facts appeared to show that the organisms that produce typhoid fever escape into the air more readily from the gravels than from the stiff and usually moist clays. I have just prepared a map showing the distribution of 3461 cases. The difference between the gravel and the clays, though not so great as previously pointed out, is shown very decidedly. This is probably due to the exceptionally hot and dry year of 1893, in which the superficial layers of the clays dried to a greater extent than usual and permitted of the escape of the typhoid organism. I believe that typhoid fever is a disease of the miasmatic class, and that it becomes endemic in certain localities in which the conditions of the soil are favourable to the development of the micro-organisms which cause the disease. That the typhoid bacillus can exist apart from man for an indefinite period is shown by the prolonged cultivation of this deadly organism in nutrient materials. If it can live and multiply on broth and potatoes it can, for a season at least, exist in soils containing organic matter. Uffelman's very recent experiments show that the typhoid bacilli can resist drying for a considerable time. After eighty-two days in white sand they were still capable of culture. In house sweepings they continued intact for a month. They can be blown about in dust, and in this way get into milk or water and are directly swallowed or inhaled.[5] Karlinski found typhoid bacilli alive after five months' retention in earth. He says that the part which the soil plays in epidemics should not be under-estimated. He noticed a fact of great etiological interest—namely, that when the soil was saturated with rain water the bacilli perished. I think it will be found that, however salubrious the gravels and sands may be in a general way, there are some diseases which prevail more upon them than on the stiff and cold clays. This, at least, is the case in Dublin, where typhoid fever is more prevalent on the gravels than on the clays. The gravels in Dublin lie low and are nearest to the river Liffey, which flows through the city into a bay. The clays, which chiefly occupy the higher parts, rise to a height of 70 ft. above low water in the river, whilst the gravels are only about 24 ft. above low water. I caused three wells to be sunk in the gravels and four in the clays, and noted the height of the ground water in them. In the low-lying gravels, generally believed in Dublin to be waterlogged, the water remained low, whilst in the clays it came much nearer to the surface of the ground. The condition of the tide has only a trifling influence on the height of the ground water, although the bottoms of all the wells in the gravels and of one in the clays are below high water.

	Population of the city of Dublin by 1891 census.	Per cent.	No. of persons affected by typhoid fever in 12 years ended 1893.	Percentage of total number of cases.	Ratio of cases to population.
Living upon gravel soils	75,486	30·8	1292	37·3	1 in 58·4
,, the clay ...	169,615	69·2	2169	62·7	1 in 78·2
Total...	245,001	—	3461	100	1 in 70·8

[3] Revue Scientifique, Jan. 25th, 1890.
[4] Journal d'Hygiène, July 12th, 1894.

OBSERVATIONS ON THE HEIGHT OF GROUND WATER IN SEVEN DUBLIN WELLS, 1893–94.

Wells in the clays.—Marrowbone-lane (height of ground above low water, 68 ft.)[6]: Greatest depth of water surface from ground surface, 7 ft. 7¼ in., Oct. 7th, 1893; least depth from ground surface, 5½ ft., April 17th, 1894; extreme of fluctuation, 2 ft. 1¼ in. Stanley-street (height of ground above low water, 52 ft.): Greatest depth of water surface from ground surface, 6½ ft., July 7th, 1894; greatest depth from surface, 5 ft., April 17th, 1894; extreme of fluctuation, 1½ ft. Mansion House (height of ground above low water, 43 ft.): Greatest depth of water surface from ground surface, 9½ ft., Sept. 23rd, 1893; least depth, 7½ ft., July 11th, 1894; extreme of fluctuation, 2 ft. Fishamble-street (height of ground above low water, 30 ft.): Greatest depth of water surface from ground surface, 7 ft. 4 in., Nov. 29th and 30th, and Dec. 4th, 1893; least depth, 6 ft., May 21st, 1894—nearly the same up to July 17th, 1894; extreme of fluctuation, 1½ ft.

Wells in the gravels.—Portland-row (height of ground over low water, 23½ ft.): Greatest depth of water surface from ground surface, 12 ft., all winter, 1893; least depth, 8 ft. 2 in., Oct. 5th, 1893;[7] extreme of fluctuation, 3 ft. 10 in. Hanover-quay (height of ground above low water, 24 ft.): Greatest depth of water surface from ground surface, 16 ft. 10 in., July 17th, 1894; least depth, 15½ ft., April 16th, 1894; extreme of fluctuation, 1 ft. 7 in. Essex-quay (height of ground above low water, 12½ ft.): Greatest depth of water surface from ground surface, 12¾ ft., July 7th, 1894; least depth, 8 ft. 11½ in., April 18th, 1894; extreme of fluctuation, 3 ft. 9½ in.

Mean of maximal depths from ground surface of water surface in wells in the clays	7 ft.	7 $\frac{6}{10}$ in.
Do. minimal	6 ft.	
Difference	1 ft.	7 $\frac{6}{10}$ in.

[5] Centralblatt für Bacteriologie und Parasitenkunde, xx., 133, 1894.
[6] Low water means the Ordnance datum line, which is 8·094 ft. below mean sea level, and was the level of the low water in Dublin Bay on April 8th, 1837.
[7] This well was only 12 ft. in depth, and it dried up in October and remained dry all the winter.

Mean of maximal depths from ground surface of water surface in wells in the gravels	13 ft. 10½ in.
Do. minimal	10 ft. 9½ in.
Difference	3 ft. 0$\frac{9}{10}$ in.

On the whole, the ground water lies lowest when typhoid fever prevails most in Dublin.

Until lately the great majority of the houses of Dublin were provided with privies and ashpits, from which much filth percolated into the soil, and, although waterclosets have almost completely been substituted for privies, it will be long before the soil and subsoil become purified, and at present they are just the kind in which the typhoid bacilli would find a congenial habitat. It has been suggested that the waterlogged condition of Dublin is the cause of the prevalence of typhoid fever and that the obvious remedy is subsoil drainage; it is, however, a fact that the low-lying portion of Dublin, where there is most typhoid fever, is not damp, that the ground water lies low there, and that in the parts where the ground water comes much nearer to the surface there is least typhoid fever. The explanation of this is not difficult. The cold wet clays are unfavourable to the bacilli of the disease, whereas they have a better feeding ground in the loose and well aerated gravels. The greater movement of air in the gravels and the action of strong winds upon them favour the evolution of the microbes from the soil, the superficial layers of which dry more readily than those of the clay. In hot, dry seasons Dublin suffers, like other towns, most from typhoid fever. The highest death-rate from this cause occurred in 1893, a year phenomenally hot and dry. Dr. David Hardie in a pamphlet on the atmospheric pathology of typhoid fever in Queensland (Brisbane, 1893) shows a connexion between this disease and the soil. High barometric pressure and temperature favour the development of typhoid fever. A heavy rainfall in summer lessens the amount of disease, not only in that season but in the following winter. This effect appears to be due to the rain interfering with the germination of the bacilli, and the rain also washes them out of the soil.

The Dublin pipe water is supplied continuously to the houses, and storage cisterns have fallen completely into disuse. The water is admittedly of a high degree of purity, and is collected in a mountainous region 23 miles distant from the city. London, on the contrary, derives its water from rivers into which the sewage of a considerable region is discharged, sometimes with but slight, if any, purification. The water is generally stored in exposed cisterns. Yet the typhoid fever death-rate is more than three times as great in Dublin as in London. The drainage of London is superior to that of Dublin, and its soils are not so polluted. It is in the highest degree improbable that faulty sanitary accommodation and house drainage are the causes of the high typhoid fever death-rate in Dublin. In this respect it is neither worse nor better than in many large towns which have very little typhoid fever. The distribution of typhoid fever in this city shows that soil conditions have an influence upon it, and I believe that by far the greater number of cases owe their origin to emanations from a filthy soil. The reduction of the amount of typhoid fever in Dublin and Belfast (which is placed under somewhat similar conditions as to soil and drainage) can only be accomplished by keeping soil, air, food, and drink pure. The prompt and complete removal of filth, the continuous flow of sewage in the mains, and the prevention of leakage from drains and sewers are obvious measures for lessening the mortality caused not only by typhoid fever but by many other maladies. It is perhaps worth remarking that since the introduction of stone pavement into the Dublin streets typhoid fever has increased. It is most prevalent amongst persons whose working hours are spent in offices and warehouses in the streets which are paved or asphalted. The bacilli of typhoid fever or their spores, which escape into streets that are macadamised, cannot get through the paved roadways and are therefore more likely to be drawn into the interior of the houses through the basement floors, which are rarely concreted. The rain washes the soil beneath the macadamised roads, but the soil beneath the paved streets receives no purification of that kind. I believe there would be little or no typhoid fever in Dublin if the city rested on a stratum of asphalt. During the ten years ended in 1893 1699 deaths ascribed to typhoid fever were recorded in Dublin: of these, 24·2 per cent. were registered in the first quarter of the year 16·8 per cent. in the second, 19·7 per cent. in the third, and 39·3 per cent. in the fourth.

The limits of this address do not permit of any discussion on the biology of the so-called typhoid bacillus and whether or not it is capable of permanent independent existence apart from man. There is reason to believe that at least its spores can retain their vitality for lengthened periods outside man. The possibility of the evolution during successive generations of harmless bacilli of disease-giving properties is highly probable. The innocuous bacillus coli communis is the possible ancestor of the virulent typhoid organism, and both are almost indistinguishable. If this be so there must be many transitional forms between the two bacilli, and consequently many forms of typhoid fever or diseases resembling it. Professor von Babes has detected in the bodies of persons who had died from typhoid fever bacilli which, though morphologically resembling Eberth's organism, differed from it under cultivation and in other respects. Dr. McWeeney and myself have cultivated an organism exactly resembling the typhoid bacillus, which we found in polluted water believed to have caused an outbreak of typhoid fever. This organism was precisely intermediate in its reactions between the typhoid bacillus and the bacillus coli communis;[8] and quite recently Dr. McWeeney[9] found, in a similar kind of water, a bacillus which almost, but not quite, comported itself like the typhoid bacillus.

It is stated that typhoid fever prevails most among the upper classes. This is not the case in Dublin. During the years 1892 and 1893 the following were the mean death-rates from enteric fever amongst the different classes of society:—

	Deaths per 1000 of class.
Professional and independent class	25·7
Middle class	71·1
Artisan class	57·3
General service class	51·3
Hawkers, porters, labourers, &c.	57·5

Clerks, commercial assistants, civil servants, traders, and business managers make up the great bulk of the middle class; and amongst persons following those occupations which keep them mainly within doors enteric fever is most prevalent.

TREATMENT OF TYPHOID DEJECTA.

I am of opinion that typhoid stools are sometimes not completely disinfected before they are allowed to pass into the sewers. Phenol is generally mixed with them, but this body has not a very strong action upon them. Bacteriologists, dealing with mixtures of the typhoid and other bacilli, have killed the latter by phenol solutions, leaving the typhoid bacillus separate and alive. I have cultivated typhoid dejecta which had been treated with carbolic acid, and succeeded in developing the bacilli in large numbers. The small portions of excreta in the stools sometimes are not completely permeated by the disinfecting solution. A 5 per cent. solution of sulphuric acid, with a little permanganate of potash, is a good steriliser. It should be added in equal volume to the stool. Smooth porcelain vessels are the proper receptacles for the mixture, and they should not be emptied for one or two hours. To prevent the action of the acid upon drains or sewers lime should be added to it before the mixture is thrown out. Dr. Day, resident physician, Cork-street Fever Hospital, has adopted this treatment of typhoid dejecta and considers it satisfactory. Undoubtedly the best way to dispose of infected excreta is by burning them in a destructor, as was first, I think, done by Mr. Sergeant at the Bolton Fever Hospital. A destructor for this purpose costs about £100, and it should be attached to every hospital where fever patients are treated.

THE EXTINCTION OF INFECTIVE DISEASES.

The domain of public medicine is steadily enlarging in every direction. Investigations into the intimate nature of the infective maladies, the mystery of the immunity from some diseases shown by certain individuals, races, and countries, and the conditions affecting contagion are going on wherever science is cultivated. Surely the time must come when the results of these researches will enable man to extirpate some or all of the diseases which even now we consider and term "preventable." The slow growth of population in mediæval times was mainly due to plagues and pestilences the great majority of which have ceased to

[8] Journal of State Medicine, July, 1894.
[9] Brit. Med. Jour., May 5th, 1894.

exist. In our own times we may probably witness the extinction of two diseases which in former days cost an enormous loss of life—I refer to typhus fever and small-pox. Leprosy and ague, once common diseases in Britain, have died out. The frightful mortality in our towns, lasting well into the eighteenth century, was mainly due to zymotic diseases. Public medicine and private hygiene have lessened the death-rates in our towns by from 20 to 50 per cent. Let us contrast the England of to-day with the India of to-day, which, so far as relates to sanitation, resembles the England of the Middle Ages. In England from two to three persons per 1000 of the population die every year from zymotic diseases; in India in 1891 the death-rate from all causes was 30·14, whilst the zymotic death-rate was 18·27, or equal to the death-rate from all causes in England. In the vast province of Bengal the zymotic death-rate was 23·04. England has been described by foreigners as the birthplace and home of sanitary science, and it surely deserves the compliment. Its general and fever death-rates are amongst the lowest in the world. This is the more remarkable when one considers the large proportion of the people who live in towns—for towns everywhere are less salubrious than the open country.

Death-rates from the principal Zymotic Diseases per 1000 persons living.

Year.	England and Wales.	Large English towns.	Year.	England and Wales.	Large English towns.
1870	4·52	5·63	1882	2·76	3·61
1871	4·61	6·48	1883	2·32	2·90
1872	4·03	4·83	1884	2·80	3·61
1873	3·07	3·90	1885	2·23	2·88
1874	3·77	4·46	1886	2·42	2·98
1875	3·47	4·32	1887	2·42	3·33
1876	3·14	4·05	1888	1·87	2·49
1877	2·73	3·52	1889	2·23	2·87
1878	3·43	3·40	1890	2·16	2·89
1879	2·47	3·20	1891	1·91	2·40
1880	3·36	4·04	1892	2·01	2·64
1881	2·33	3·36			

The mean zymotic death-rate in England and Wales in the decade ended in 1879 was 3·524, and in the great towns 4·479. In the decade ended in 1892 the rate in England and Wales was 2·037, and in the great towns 2·899. Never before in the history of the world were thirty millions of people located on 50,000 square miles, as is the case with the England of to-day. Of these thirty millions two-thirds reside in the towns, which yearly have a quarter of a million added to their teeming population. In Germany 42 per cent. of the population live in towns containing 2000 inhabitants and upwards. Only every tenth Russian lives in a town. Notwithstanding the great and continuous increase in its urban population, Great Britain grows healthier and healthier from decade to decade. Amongst the various influences which have contributed to bring about this exaltation of the national health the work of the British Medical Association has not been least effective. Judged by its past, we may surely expect that the voice of the largest and most powerful medical association in the world will continue, trumpet-tongued, to advocate the cause of sanitary progress.

Clinical Lectures
ON
DISEASES OF THE EYE.

By CHARLES BELL TAYLOR, M.D., F.R.C.S. EDIN.,
SURGEON TO THE NOTTINGHAM AND MIDLAND EYE INFIRMARY.

LECTURE X.

SECONDARY OR AFTER CATARACT.

GENTLEMEN,—When Voltaire was asked, What is truth? he replied "Il n'y a rien de vrai excepté le laid;" and I think we may so far agree with him as to admit that nothing is perfect in this imperfect world. Everything has its drawbacks, and the drawback to an otherwise brilliantly successful cataract operation is the not infrequent subsequent formation of an opaque film in the pupillary area, which seriously interferes with vision and robs us of half the fruit of our labours. It has been well said that he who can teach us how to avoid this complication will be entitled to a niche in the Temple of Fame and may take his place beside Daviel, the illustrious inventor of cataract extraction. Let us see, first, what is the cause of this troublesome sequel to extraction; second, what may be done towards its prevention; and, third, how best to deal with it when, in spite of our care, it proves an obstruction to vision. The lens, as you know, is enclosed in a capsule or sac, which possesses very curious properties: it is tough, elastic, brittle, and easily permeable by fluids,[1] and, although perfectly transparent, may, like corrugated glass, act as a blind by falling into folds after the removal of the lens. It may also, though still transparent, shut out the light by the adhesion of lenticular débris to its endothelial surface, and it may, in like manner, form an opaque film through the deposition of lymph, the result of inflammation—an event which may again be complicated by a more or less fixed or contracted pupil, or even, in extreme cases, by exudation from the choroid semi-opaque vitreous and more or less disorganised retina. My late friend, Alexander Pagenstecher of Wiesbaden, who was kind enough to show me some of his cases and operations, sought to render these contingencies impossible by scooping out the capsule, lens and all—*uno ictu*, as it were—with a spoon of quite formidable dimensions (Fig. 1), an operation

FIG. 1.

which has recently been recommended by Laquer[2] and adopted by certain Italian and Spanish surgeons—notably, with modifications, by Delgado of Madrid; but profound anæsthesia is necessary with Pagenstecher's operation, since the least muscular effort or involuntary contraction is apt to cause considerable loss of vitreous, which may again be forced out by the vomiting which so frequently accompanies or follows the intoxication of anæsthetics. Moreover, if the capsule is of normal consistence, it is simply broken up by the spoon, with consequent hyalitis, cell proliferation, and turbidity of the vitreous; while, if it is sufficiently tough to resist, it is, according to my experience, best lifted out, lens and all, with the forceps which you have seen me use for that purpose.[3]

Other surgeons have endeavoured to avoid secondary cataract by cross-hatching the capsule, or, as Mr. Swanzy recommends, by incising it in accordance with a definite plan, or by removing as large a portion as possible with forceps; but the pressure necessary to grasp the capsule may cause rupture of the suspensory ligament, and the iris is apt to be pinched between the blades—an accident which has led to the adoption of specially devised instruments, such as those I have here, invented by Professors Kuhnt and Weber, as also by Dr. Smith of Detroit, Michigan.[4]

Unfortunately these methods, which answer admirably in some cases, are too often followed by wrinkling of the capsule, cell proliferation, and more or less obscuration of the pupil; besides, the breaking up of the capsule sets free a mass of lenticular cortex, which, comparatively harmless if retained within that membrane, becomes a formidable source of irritation when set free in the anterior chamber or when brought into contact with recently cut surfaces. I therefore, save in exceptional cases, advise you to incise the capsule in its periphery only, on a level with the upper border of the lens, to remove all cortex after evacuation of the crystalline with fastidious care, and to take your chance of a second operation on the capsule, should that prove inevitable. We always leave the posterior capsule, which, though much thinner than the anterior, retains its transparency and fulfils an important

[1] See Bowman on the Anatomy of the Parts concerned in Operations on the Eye, p. 62.

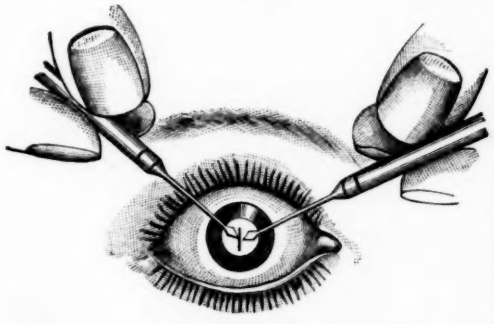
[2] Annales d'Oculistique, 1892, p. 79.

[3] In 27 per cent. of these operations it has been found impossible to extract the lens and capsule together, and in two-thirds of the cases there was a considerable loss of vitreous. The large iridectomy also, which forms part of the operation, is apt to cause pronounced radiation of vision, dazzling, and conspicuous deformation of the pupil. See Wecker, Ocular Therapeutics, p. 352.

[4] See Journal of American Medical Association, September, 1891.

function in keeping the vitreous in its place; and if the anterior capsule is untouched, save in that portion which is concealed by the upper border of the iris, it will also in many cases retain its transparency, and will also when distended with fluid, by endosmosis of the aqueous humour, fulfil a still more important function by compensating for the loss of the lens.[5] Should the capsule, however, in spite of our care, become wrinkled, opaque, or the seat of inflammatory deposit, it will be necessary to deal with it by one or other of the operations which have been devised for this purpose; and here you will naturally conclude that if it is possible to cut the eye open and to remove so important a portion of its contents as the lens itself any subsequent dealing with a mere film must be almost, if not quite, danger-free. But, alas, it is not so. Experience has taught us that it is easy to re-excite the circulation of an eye which has been recently operated on for cataract, and there is the risk of irido-cyclitis provoked by dragging on the iris, of glaucoma by traction on the ciliary body, and of infection of the whole eyeball by exposure of the vitreous to contact with the external air. The late Sir William Bowman endeavoured to minimise these risks by breaking up the capsule with two needles, one in either hand. (Fig. 2.) With these he penetrated the cornea

FIG. 2.



at an angle of 60° or thereabouts, pierced the capsule, and then, by revolving the spear-shaped points of the needles round each other and separating the handles, tore the opaque film asunder, as he contended, without any drag on the tissues with which the capsule is connected. But the needles are apt to dig into the vitreous and break up the transparent posterior capsule; manipulation of the doubly impaled eyeball, which cannot otherwise be fixed, is difficult; and the operation is not always successful. In spite of our efforts it not infrequently happens that portions of elastic, resilient capsule remain athwart the pupil and mar the retinal image; hence, in order to succeed still better, Professor Noyes of New York has suggested that we should obtain an opening at each extremity of the horizontal diameter of the cornea by transfixing it with a Graefe's knife, at the same time incising the centre of the false membrane, and then with two blunt hooks passed through each of the external wounds engage the incision in the capsule and by pulling one hook against the other establish a sufficient aperture without any dragging on the ciliary region. But it is not easy to incise the membrane before making the counter-puncture, and its flaccidity after escape of the aqueous renders it still more difficult to deal with; moreover, the hooks can only be withdrawn with their concavities upwards, and the double manipulation with the eyeball on the stretch and with a contracted pupil complicates matters sometimes to an embarrassing degree. I therefore, when I last attended Desmarres' Clinique in Paris, induced M. Luer to make for me some sharp hooks (Fig. 3)

FIG. 3.

so curved that they could be entered and withdrawn in any position, and with these I have been able to treat several cases without drag or subsequent excessive irritation. Of course, if the obstruction is caused by a mere film, or simply by corrugated membrane, it may be dealt with by the needle-knife alone, or the knife supplemented by a single hook or cystitome, in which case the operation is reduced to its simplest elements, and is usually followed by but slight reaction. If, however, the pupil should be fixed and occluded by dense membrane, accompanied with inflammatory deposit and more or less disorganisation of surrounding parts, it becomes necessary to cut out a piece in order to secure a passage for light. Sir W. Bowman, in these cases, used to make an incision in the corneo-sclerotic junction, divide the peccant tissue with scissors, and remove a triangular piece with forceps; and quite recently Dr. Lindo Ferguson of Dunedin, New Zealand, has devised a modification of Wecker's scissors, which I have found very useful for this purpose. The shape of the scissors (Fig. 4), as you see,

FIG. 4.

is the same as that of Wecker's, but the blades are turned in the opposite direction to the usual pattern and lie closed instead of open when in a position of rest. They are sharp on both outer and inner edges, and the points will readily pierce the capsule, so that it is easy, with a corneal opening, to cut out any portion of the capsule without drag either on the ciliary processes or the tissues with which the capsule is connected.

It is curious to note the extraordinary differences of opinion which prevail among most competent authorities regarding these operations for secondary or after cataract. Knapp, for instance, who operates upon the capsule within a fortnight of extraction, reports only ten cases of glaucoma among 683 cases observed during six years; nine of these, however, were instantly cured by iridectomy; and, although he saw a few cases of hyalitis and congestive irido-cyclitis, he says they all got well without damaging the sight, and not a single eye was lost. "Pas perte d'œil, pas d'inflammations graves."[6] Similarly, many eminent ophthalmic surgeons scarcely allude to the dangers attending division of the capsule, and others evidently consider the operation of extraction incomplete without it; on the other hand, there is a mass of evidence to show that this apparently trivial proceeding is by no means so simple as it seems. M. Nuel of Liège, for instance, an eminent authority, says: "A single discission of a secondary cataract by corneal puncture is infinitely more dangerous than an iridectomy, and is at least as dangerous as an extraction which has been accomplished without lesion of the vitreous." Again, Professor Gayet of Lyons says: "There is no operation I fear more; it appears to me always uncertain, often useless, and at times very dangerous."[7] Professor Trousseau says he does not hesitate to declare that he considers a secondary operation more grave than a primary, adding: "The discission or extraction of the capsule frightens me beyond everything." In the same strain, Dr. Kalt remarks: "Secondary cataracts always give me great anxiety, and as far as possible I do not operate upon them, having had 'mauvais souvenirs' of iritis and irido-cyclitis, glaucoma, and detached retina as a sequel to such operations."[8]

Speron, Bribosa, and Critchett dwell upon the fact that the least traction upon the ciliary body, especially in an eye which has been already traumatised, may provoke a pernicious irido-cyclitis; and Dr. Valude, the talented editor of the "Annales d'Oculistique," whose remarks I will quote in his own words, says:—"C'est là vraiment le gros avatar de l'opération de la cataracte, la vraie complication, plus redoutable que les prolapsus iriens, qui guérissent bien, et que la panophthalmie, si rare. Nous redoutons les opérations secondaires plus que l'opération primitive, l'infection y est plus fréquent et surtout la cyclite traumatique. L'extraction à la pince de la membranule, sa discission ou sa délacération, de quelque manière que ce soit, n'est pas une manœuvre inoffensive; si l'on ne voit que rarement à la suite le décollement des parties périphériques de la rétine on ne

[5] I have had patients treated in this way who were able to read small print without glasses after extraction of the lens.

[6] Annales d'Oculistique, June, 1893.

[7] Speech at Heidelberg Congress, Annales d'Oculistique, June, 1893.

[8] Bulletin Clinique des Quinze Vingts, 1891, p. 50.

manque pas de ces réactions irritatives du cercle ciliaire fort désagréables à traiter, longues à guérir, et qui laissent après elles des dépôts exudatifs, souvent considérables."[9] Indeed, so great is the dread of secondary operations in the minds of some surgeons that patients are abandoned who have only three-tenths of visual acuteness, when a simple tearing of the capsule would have given them 80 per cent. or perhaps even normal vision. Whence this extraordinary difference of opinion? Why these fears? Well, I believe it is entirely due to the fact that there is no other operation in which the surgeon is so insensibly, and almost inevitably, drawn on into doing too much. We make a slight incision in the capsule, which would suffice if we could only let it alone. We think it may close or prove insufficient, and are tempted to enlarge it; then, in consequence of our interference, a portion of opaque membrane falls across the pupil—it must be removed; we remove it, thus drawing more capsule into the pupillary space; we endeavour to make—indeed are now compelled to make—a clean sweep; and then there is more or less drag, consequent reaction, pain, trouble, regret, with ultimate results that fall far short of what we might reasonably have expected, and which we might easily have secured if we had only been more mindful of Lord Melbourne's famous maxim and "let it alone." Professor Mooren of Düsseldorf, who, when I last visited his clinique, was enthusiastic about the value of iridectomy some weeks before the extraction of cataract, and who now, I see, has abandoned iridectomy either as a preliminary or a part of that operation, makes only a slight slit with a fine knife or cystitome in the membranule when operating for secondary cataract, and, if that does not suffice, another at right angles to it; *but not before some time has elapsed.* Indeed you cannot be too careful; and, although my experience has been on the whole favourable, I have seen enough to warrant me in insisting that you must be both cautious and sagacious in dealing with secondary cataract. Any indiscretion, or especially over-zeal, may bring you, as I have already pointed out, face to face with a whole series of complications; of these a gradual or sudden increase of tension, requiring iridectomy or puncture with a broad needle,[10] is not the least frequent. Again, you may have quite unexpectedly slight detachment of the retina, or iritis or irido-cyclitis, from overdrag, or even panophthalmitis from infection of the whole eyeball; all but the last of these are avoidable by judicious operating, and the risk of the last may be minimised or reduced to nothing by careful asepsis or antisepsis. The air is loaded with microbes, as are also the nasal, buccal, and conjunctival secretions,[11] and there is no better medium for their cultivation than the vitreous humour itself. The deeper you go into the eyeball, the more liable you are to see infection follow; so that if a bead of that humour appears in the wound you must regard it as a portentous incident. Knapp recommends instant cautery, certainly the most efficacious of all sterilising agents, since no living organism can resist a temperature of 120° C., or 248° F.; but you will find that as fast as one projection of gelatinous exudation is destroyed another takes its place; so that we are compelled to resort to less destructive, if less potent, antiseptics. Of these, the biniodide, the cyanide, and the bichloride of mercury, in the order named, are by their most prominent advocates — Panas, Illingworth, Chibret, and others — considered the most efficacious.[12] But here, again, we must bear in mind Aristotle's maxim, as true to-day as when it was first uttered—τὸ δὲ πρῶτον τὸ μὴ βλάπτειν ("the first thing of all is not to do injury"). Some microbes are more tenacious of life than the physiological cell itself, and there is no safeguard against infection, so far as the eyeball is concerned, equal to the intact corneal and conjunctival epithelium. I have seen even the gonococcus of Neisser kept at bay simply by healthy mucous membrane;[13] and the streptococcus pyogenes, as well as the staphylococcus aureus and albus, which most frequently attack the eyeball, are successfully resisted by this, nature's first, defence against infection. We see object-lessons enough of this kind in the speedy destruction which follows abrasion in infecting ulcers of the cornea, and you will readily understand that any chemical agent strong enough to injure the epithelium is therefore too strong to use. I will go further, and insist that the irritation caused by strong solutions often provokes a secretion which actually protects the microbe and provides a bed for its growth and multiplication.

Again, you cannot be too careful with cocaine; although the fact is but little appreciated, it is certain that too strong solutions of that drug, too long applied, have the power of delaying cicatrisation and of drying up and fissuring the corneal epithelium. It has been well said, "Moins l'on emploie, plus cela vaut," and the fact that the various collyria so commonly used in affections of the eye may in themselves be a medium of infection has latterly attracted the attention of ophthalmic surgeons and been ably commented on in a recent lecture by L. de Wecker. It is certain that these solutions are better borne and are more efficacious when used at a temperature of 99° or 100° or thereabouts, and you will do well to sterilise your cocaine, atropine, eserine, antiseptic, and other solutions by boiling shortly before use. This is readily accomplished in a Stroschein's flask (Fig. 5), or better still with a Llewellyn's (Fig. 6), since the latter needs less handling about the nozzle, and is therefore not so likely to be contaminated again after sterilisation.[14]

FIG. 5.

FIG. 6.

Gentlemen,—It has been my lot to operate upon thousands of patients, and many of these were treated before the days of asepsis, antisepsis, and cocaine. I can therefore bear my testimony to the fact that all three, especially the first, have smoothed our path to a remarkable degree: indeed, so great has been the service rendered that one is tempted to forget that both inflammation and suppuration may arise and run their course to complete destruction of tissue without any microbes at all; and that, although infection usually comes from without, it may come from within owing to what is called "auto-inoculation," against which all local applications are impotent and of no avail.

[9] Valude, Bulletin Clinique, 1892, p. 40.

[10] Puncture with a broad needle through the iris into the vitreous humour will usually suffice. This was Sir W. Bowman's practice, and Mr. Pridgin Teale, who allows a few drops of vitreous to escape by turning the needle on one side, says that "in each case intense agony was converted into perfect ease."—See Bowman Lecture, 1893.

[11] "It is easier to protect the abdomen than the eyeball from infection." (Steffan.)

[12] The most frequently used antiseptic is the bichloride of mercury, originally recommended by Sattler, in the proportion of 1 to 5000 of distilled water. Panas says that a much weaker solution of biniodide of mercury is equally efficacious and much less irritating. Chibret recommends the cyanide of mercury, 1 in 1500, added to 1 in 7000 of common salt; this, he says (see Archives d'Ophthalmologie, 1892), is equal to 1·1500 of corrosive sublimate, and much less irritating. The two last have the advantage of not coagulating albumen. The most innocuous antiseptic, however, is saturated solution of boracic acid; the addition of a little borax to this solution increases the dissolving power of water by 4.

[13] On three occasions in a case of pannus I failed to inoculate an eye with gonorrhœal matter, succeeding only at last when a portion of the mucous membrane was destroyed.

[14] Stroschein's flask is represented (Fig. 5) ready for use. Both flasks are constructed of thin glass, so as to bear heat without breaking; the pipette of the first has two bulbs surmounted by an indiarubber nipple; it may be held over a flame by a clip or supported on a wire gauze tripod over a spirit lamp. Before boiling, the indiarubber nipple is removed and the pipette reversed, so that the steam driven through the tube effectually sterilises it. It is in replacing the indiarubber nipple and in refixing the pipette that it is suggested that re-contamination may be effected. The fluid contained in Llewellyn's bottle is sterilised in like manner. The heat of the hand is sufficient to propel the contents of this flask, and the drop may be augmented into a full stream by compression of the indiarubber bulb. See paper by Webster Fox in Ophthalmic Record, May, 1894.

Now the danger arising from this last source of disaster may be, according to my experience, greatly diminished by subjecting the patient to a certain amount of preparation previous to operation. This treatment—which, as you will doubtless surmise, comprises attention to the secretory functions, baths, open-air, exercise, and the elimination so far as possible of causes of anxiety, with consequent augmentation of the general health—may be wisely undertaken in all cases where time and other means and resources are available. As to the coarser forms of obstruction with false membrane and adhesions following cataract extraction, they are hardly ever observed after operations which have been completed without misadventure; and it has been well said by Mr. Brudenell Carter that the lesson to be learned from them is that we must so operate as to avoid them. With this end—the avoidance of accidents—in view let me urge you, when extracting for cataract, so to fix the eyeball as to retain complete control of it so long as is necessary during the operation; to finish the incision with scissors if after counter-puncture, as sometimes happens, the iris folds over the edge of the knife; to lacerate the capsule with a light hand; and to take care that the iris is replaced before closing the eye. Let me also repeat that when operating for secondary cataract you must avoid drag, and above all, in both primary and secondary operations, be careful to secure immunity from infection without damaging the eye. It is the camel alone, of all animals, that deliberately walks into a quicksand that has just before its eyes engulfed its predecessor, and if you will only be content (unlike the young lady who insisted upon seeing the folly of going to balls for herself) not to see the folly of it for yourself, but to utilise the experience of others, you may avoid many shoals and quicksands, save many eyes, and go far to secure that which is the aim and aspiration of us all—namely, the greatest possible maximum of success with the least possible proportion of failure.

HYGIENE IN UNIVERSITY EDUCATION.[1]

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THE division and specialisation of labour which are characteristic of modern civilisation are applied in educational affairs as well as in the supply of clothing, food, and habitations for the people.

What should a university education in hygiene include? Wherein should it differ from the course in hygiene in a technological or medical school intended to train sanitary engineers or medical officers of health? What should be its special objects? I will not try to formulate what I suppose your answers to these questions would be now, nor yet what the answers should be if you found the questions on an examination paper, but will try to suggest one or two points which, perhaps, may not have occurred to you. The phrase "university education" implies breadth as well as depth of culture; and a man who has received such an education in any field of science should have some definite ideas as to what questions are still *sub judice* in that field, as to what additional data are still wanted, as to what original investigators and observers are working at; in short, he should know the boundaries of our present scientific knowledge on that subject as well as the part which has been thoroughly explored. He cannot get this information from manuals or handbooks, nor can a short course of lectures include much of it; it is to be obtained for the most part only by actual work in investigating, which is the best of all methods to demonstrate to a man what and how much there is that he does not know. A university education in hygiene should not only include information as to the nature and relative importance of the principal known causes of disease and death, immediate and remote, but also as to the cost of the means of partially or entirely doing away with these causes, as compared with the value of the results which may be thus obtained.

The influence of epidemics on the progress of nations and communities is by no means merely a matter of ancient history. Yellow fever has, to a considerable extent, shaped the present commercial, social, and political condition of the West Indies and Central Africa, of New Orleans and Rio de Janeiro. Cholera was the immediate cause of modern hygiene; its ravages have been closely connected with certain religious observances, and its prevention is still a problem which must be solved by British statesmen; while the future of the continent of Africa depends quite as much upon progress in hygiene as upon political considerations.

Let us now take a few concrete examples of diseases whose cause and, therefore, whose part in national affairs are not so well recognised. What is the cause of measles? How is it communicated? What is the probability that the disease can be communicated by a person after the eruption has fully developed and the diagnosis is certain? We do not know. We know that the disease is most contagious during the three or four days preceding and during the first day of the eruption, and that attempts to prevent the spread of the disease in a family by isolating the patient as soon as the eruption appears rarely succeed, while the contrary is the case in scarlet fever and in small-pox. We suppose that the medium of contagion is the secretion from the upper air passages, which is scattered in spray by the coughing and sneezing of the patient. Does the susceptibility to measles diminish with advancing years, as does that of scarlet fever? We do not know; but the experience of the Faroe islanders and of the American recruits brought together at the beginning of our last war indicates that, while it is most fatal in children under five years of age, it may be quite as contagious and nearly as fatal among adults as among children. Now all these are questions to be considered in deciding as to whether notification and isolation of cases of measles are to be enforced in any particular locality. We have fairly good statistical evidence that the evil effects of scarlet fever, diphtheria, and small-pox have been diminished by compulsory notification and isolation; but I know of no such evidence with regard to measles. Measles appears to have caused at least twice as great a mortality in the large cities of England and Continental Europe during the last five years as it has in the United States; but why this is so I cannot tell. The death-rate from measles is small as compared with that from accidents, or from many other forms of disease; but its evil effects are not to be measured by its death-rate alone. Dr. Hugh R. Jones,[2] in an interesting paper on the perils of infant life, presented to the Royal Statistical Society in December last, says: "The danger of measles has been very greatly under-rated. There is no doubt but that the tuberculous diseases of childhood, whether local, as lupus and enlarged glands, or whether general and fatal, as pulmonary phthisis, are often rightly traced and attributed to an attack of measles." There is no definite evidence upon this point, which is an important one. In the United States a considerable proportion of cases of feeble-mindedness, deaf-mutism, and blindness are attributed to measles, sometimes erroneously no doubt; but we must certainly consider this disease as of sufficient importance to warrant special precautions to prevent its evil consequences. I doubt, however, whether it is worth while to expend much public money or to interfere with home life in order to prevent it among children over five years of age, and the true solution of the problem will probably be the production of a mild form of the disease in children, and thus making them immune for the rest of their lives. This is practically what has been done for centuries in China with regard to this disease; and when I was a boy I have known people to deliberately expose their children to the infection of a mild case of measles in warm weather in order "to get the disease through the family without risk," as they said. Something of the same sort used to be done by northern men settling in New Orleans, in purposely exposing themselves to yellow fever when it existed in a mild type, in order that they might become "acclimated," as the phrase went.

Let us next take typhoid fever. Typical cases of this disease are caused by a specific bacillus which gains entrance to the body through food or drink contaminated with the excreta of persons affected with the disease. Epidemics are due to contaminated water or milk. The stools of a typhoid case can be cheaply and easily disinfected so as to destroy the specific bacillus, and I presume that many persons think that we know all that need be known to stamp out typhoid fever, or, as the English registrars call it, enteric fever. In the United States, however, we have many cases of mild

[1] Abstract of a paper read before the University Extension Classes, Oxford, Aug. 7th, 1894.

[2] Journal of the Royal Statistical Society, vol. lvii., 1894, p. 15.

continued fever, lasting from twenty to thirty days, which we presume to be typhoid fever, but which are certainly not typical, and which shade into continued malarial forms of fever in a very puzzling way. There are also several known varieties of the typhoid bacillus; and it is not quite certain that one or more of these varieties do not exist at times in the intestinal tract without producing a specific fever in the person bearing them. Can the specific, active typhoid bacillus be developed from some of these, under certain circumstances, in privy vaults, cesspools, or sewage? Is the typhoid bacillus carried in currents of sewer air? Are not all the cases in which it has been supposed to have been thus carried to infect men more easily explained in other ways, as, for example, by the supposition that it has been conveyed to articles of food or drink through the agency of flies and other insects? What degree and duration of immunity from subsequent attacks does an attack of typhoid fever confer on a man? Is there any difference between the immunity conferred by a mild and that conferred by a severe attack? Are there attenuated varieties of the typhoid organism? Can these be developed into more dangerous forms under certain conditions? Can they be used to produce immunity?

All of these questions are as yet unsolved, yet probably solvable problems; and there are similar ones connected with each of the known and unknown pathogenic micro-organisms upon which bacteriologists in various parts of the world are working. Tuberculosis causes in England and the United States much more suffering and loss of life than any other single form of disease—more than cholera, yellow fever, small-pox, scarlet fever, typhoid fever, measles, and diphtheria put together. Its immediate or efficient cause, the bacillus, has been carefully studied; and some of the modes of its transmission, through dried sputa, milk, &c., are fairly well understood. To what extent heredity is a factor in its transmission we do not know. Quite recently, in many places in the United States, it has been proposed to limit its ravages by means of compulsory notification, isolation of the sick, disinfection of their surroundings, and official supervision of milk and meat supplies; and in a few places some of these methods are being tried. The results of these experiments will be watched with great interest; they are good examples of the steadily increasing tendency to interfere with the liberty of the individual for the supposed benefit of the community.

The death-rate from phthisis has been diminishing for the last twenty years in the eastern portion of the United States, and in most countries from which we have reliable statistics. Part of this decrease in the death-rate is probably due to improvements in food-supply and in general sanitation, involving greater cleanliness and more exposure to sunlight, which last is one of the most powerful agencies in destroying the infection of tuberculous sputa scattered in the streets; a part of it during the last ten years is due to the education of the people as to the necessity of promptly disinfecting the sputa of tuberculous patients; and a part is probably due to a gradual increase in the proportion of persons who are immune against small doses of the tubercle bacillus, which increase is brought about by the law of natural selection. I shall refer presently to this immunity as connected with race in relation to phthisis, and also to pneumonia, another very fatal disease due to micro-organisms.

Now let us take an entirely different field of hygiene—namely, the effects produced on the health and life of men by inhaling air which has recently been expired by themselves or other men and which also contains the exhalations from their skins. It is generally accepted as a truism that air thus vitiated is dangerous to health and that ventilation of living-rooms, bed-rooms, barracks, school-rooms, &c. is an important sanitary measure. Now what are the effects upon men of exposing them for eight or ten hours a day to air rendered impure by their own exhalations, and to what particular change in the air are these effects due? From the days of the English Barrack Commission down to about ten years ago the answer was that such air produced phthisis and other pulmonary diseases. Now that we know that phthisis and croupous pneumonia are produced by specific bacteria the question is whether, if these bacteria are destroyed and kept out of inhabited rooms, which can be done to a very great extent, the foul air of an ordinary room will produce disease, and, if so, what sort of disease. We do not know, and, therefore, we cannot produce scientific demonstrative evidence to convince architects and engineers that each man ought to have a certain stated supply of fresh air per minute or per hour, and that it is worth the cost of special apparatus to ensure this. Much the same may be said about the supposed injurious effects of sewer air, since we have no accurate knowledge or satisfactory evidence with regard to these effects.

My friend, Sir Henry Acland, suggested to me that I should take "Comparative National Health" as the subject for this lecture, and any suggestion from him is to me almost equivalent to a command; but it is beyond my power to indicate even the boundaries of so broad a field as this within the limits of a single lecture, and I can, therefore, only touch upon one point connected with it—namely, the relation of race to health. During the twenty years ending in 1890 the annual death-rate in Austria was 30·6, in Italy 28·6, in Prussia 25·6, in France 22·8, in Belgium 21·4, in England and Wales 20·3 in Ireland 18·0, in the United States 18·0, and in Sweden 17·6 per 1000 of living population. Such figures, however, prove very little, for in comparing the vital statistics of different countries and nations, either as to general death-rates or death-rates due to particular diseases, it is impossible to say what proportion of the difference observed is due to differences in climate and food, and what to race peculiarities. This difficulty can be in part avoided by examining the vital statistics of different races living under the same conditions as to climate, &c.; and the data coming from certain portions of the United States, which is now the great mixing ground of races, are especially valuable in this respect. In 1890 the city of New York contained about 335,000 white persons whose mothers were born in America, and 25,000 coloured; 400,000 whose mothers were born in Germany; 400,000 whose mothers were born in Ireland; 120,000 Russian and Polish Jews; 55,000 Englishmen; and 54,000 Italians. You will see that it had a larger Irish population than any city in Ireland, and that but three cities in Germany exceed it in the number of the German population. Taking the deaths among persons fifteen years old and upwards for the six years ending May 31st, 1890, we find that the annual death-rates per 1000 of population in these different races are as follows: Irish, 28·0; coloured, 23·6; English, 20·8; Germans, 17·0; Americans, 16·0; Italians, 12·3; and Russian and Polish Jews, 6·2. The low death-rate of the Jews has been noted in Germany and France also. In New York City they occupy some of the most crowded tenement-house districts. A considerable number of those reported as Germans were Jews with a low death-rate, and if these could be separated the death-rate of the Germans would probably be over 19 per 1000. These are general death-rates only. Let us see what the figures are for certain causes of death. The annual death-rates for phthisis were for each 100,000 persons: coloured, 774; Irish, 646; Germans, 329; Americans, 205; and Russian and Polish Jews, 98. For pneumonia the death-rates per 100,000 persons of all ages were: Italians, 456; coloured, 390; Irish, 344; American whites, 273; English, 269; Germans, 214; and Russian and Polish Jews, 170.

I will not weary you with further details of figures which those of you who are specially interested in the subject will find in the reports of the vital statistics of the Eleventh United States Census, but will merely say that the corresponding data from Boston, Philadelphia, Baltimore, Washington, and from the New England States as a whole, taken with those from New York State and New York City, and with those derived from a special investigation of over 10,000 Jewish families, including over 50,000 persons, lead to the following conclusions as being probable for the United States:—1. The coloured race is shorter lived than the white, and has a very high infantile death-rate; it is specially liable to tuberculosis and pneumonia, but is less liable than the white race to malaria, yellow fever, and cancer. 2. The Irish race has a rather low death-rate among its young children, but a very high one among adults, due to a considerable extent to the effects of tuberculosis, pneumonia, and alcoholism. 3. The Germans appear to be particularly liable to disorders of the digestive organs and to cancer. 4. The Jews have a low death-rate and a more than average longevity; they are less affected than other races by phthisis, pneumonia, and alcoholism, but are especially liable to diabetes, locomotor ataxy, and certain other diseases of the nervous system. Can this relative immunity be developed or increased in an individual or a family by artificial means, or by regulation of the habits and modes of life? And, if this can be done, what effect will the production of immunity against one micro-organism or disease have upon the effects of another micro-organism or cause of disease?

If we can produce a branch of the Irish race which will be as immune against the bacillus of tuberculosis as are the Jews, will that race be specially liable to diabetes or cancer?

As all men must die, the effect of stamping out one particular form of disease must be to increase the number of deaths from other causes, and in this sense it is true that vaccination has increased the number of deaths from accidents, from suicide, and from phthisis, because it has preserved children from small-pox to die at a later period from these other causes; but we have not a particle of evidence that the immunity against small-pox produced by vaccination is the cause of, or is accompanied by, a less immunity against some other disease. Here it should be remembered that, for all diseases of which one attack produces immunity, the tendency is, in the course of many generations, to make the whole population subjected to such an influence immune.

Perhaps some of you may think that such questions as I have suggested are purely theoretical, unanswerable, and, therefore, of no practical interest; but it is not so. Some of them, if not all, can be answered, and they ought to be answered. To do this, new lines of investigation must be opened—partly experimental, in well-appointed laboratories; partly by collective investigations by medical men and in hospitals; and partly by new methods of statistical research based on disease as well as on death registration and the census. And the universities should train some men to understand the importance of this work—the men who are to become legislators and heads of departments, and some other men who can do the work if means and opportunities are afforded them. It is now generally admitted that biology is a branch of science for which universities should provide the means of increase and of diffusion of knowledge; but it has not yet been generally understood that morphology and physiology, as ordinarily provided for in university work, do not cover the most important part of biology—that part to which they are merely necessary preliminaries, that part which is the main reason for their existence, and without which they rest on narrow scientific foundations—namely, pathology. We cannot be said to understand the structure and functions of an organ until we know what these are in its abnormal as well as in its normal condition. It is to experimental pathology in its broadest sense—including not only the study of lesions specially produced for the purpose, but also the study of the lesions produced in man and animals by disease, each case being one of nature's experiments—that we must look for the most valuable explanations of peculiarities of structure and function, for explanations of the mode of action of physical, chemical, and vital agencies in the production of disease, for means to counteract the abnormal conditions and actions of organs and tissues—in short, for the scientific foundations of hygiene. It appears to me that at the present time the majority of the English and American universities are in urgent need of a department of pathology properly equipped for original research and for teaching, not as a mere technological matter or as merely a branch of the medical department, but as a department of general biology; and the organisation of such a department should precede or accompany the organisation of a department for the promotion of scientific hygiene. It seems to me that a great university which is worthy of its name should provide for the training and equipment of a few men to consider these and similar questions, and for the training of many men who are to be the future legislators for, and the advisers of, the people, in such fashion that they can appreciate, and make practical applications of, the conclusions to which the special students shall arrive.

TREATMENT OF DIPHTHERIA BY THE SOLUBLE SALTS OF MERCURY.

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IN order to form a just estimate of the value of any treatment in diphtheria it is necessary that the particular treatment should have been practised for a lengthened period of time and during epidemics which were not characterised by the benign type of the disease. For the last eight years I have constantly used perchloride of mercury, administered internally, in the treatment of diphtheria; and that during this period the disease prevalent in Buenos Ayres has not been of a benign type the following statistics will show:—

Mortality from Croup and Diphtheria in Buenos Ayres.

—	1887	1888	1889	1890	1891	1892	1893
Diphtheria	753	1113	646	802	480	441	433
Croup ...	242	272	259	235	143	168	225
Total ...	995	1385	905	1037	623	609	658

My personal experience of this treatment has been one of continued success, and in marked contrast to the results which I had obtained before I had begun to use the internal administration of perchloride of mercury. I have not kept statistics of all the cases I have treated during these eight years, but my experience during this period leads me confidently to affirm that, when cases of diphtheria are *from the first* treated by the internal administration of perchloride of mercury, the disease becomes divested of the terrific power it has acquired in so many countries, and its mortality may be reduced to that of any other of the contagious diseases. But in order that the above treatment may have the efficacy to which I bear testimony it is necessary that it be employed immediately after the detection of the disease and not delayed until the diphtheritic toxines have laid low the vital powers of the patient. The internal administration of mercury in the form of calomel was practised in diphtheria by Trousseau, Bretonneau, and other French physicians in the beginning of this century, but with only partial success.[1] The internal administration of the soluble salts of mercury is of more recent date and has been advocated chiefly in the United States, Sweden, and Russia. Dr. Pepper, in his inaugural address at the Section of Medicine at the annual meeting of the North American Medical Association, stated: "But recently remarkable results have been observed in diphtheria after the employment of large doses of perchloride of mercury." He then described a case, presenting conditions in which he had never seen recovery to follow before, but which was nevertheless saved by the internal administration of perchloride of mercury.

In Sweden Dr. Sellden[2] medical officer of the Government, relates that in the district of Norberg 564 persons were attacked with diphtheria between the years 1879 and 1882. Of these, 523 died, the mortality being 92·7 per cent. During that period cyanide of mercury was not used in the treatment of the disease. During the following three years, between 1883 and 1886, there occurred in the same district 160 cases of diphtheria. Of these, 132 were treated by the internal administration of cyanide of mercury, with only one death, while of the remaining 28 who did not take the cyanide not one survived. Dr. Sellden and his colleagues have treated 1400 cases of diphtheria with cyanide of mercury, with a mortality of 4·9 per cent. Dr. Sellden uses no local application save, where practicable, gargle of cyanide of mercury, 1 in 10,000 of peppermint water. In Russia Dr. Werner,[3] medical officer of a district near Narwa, in the Gulf of Finland, gives his testimony to the good effects produced by the internal administration of perchloride of mercury coupled with frictions of ichthyol. He states that diphtheria is very frequent and fatal in his district, having treated 90 cases during six years, with a mortality of between 60 to 70 per cent. Last year, he states, the disease took an exceptionally severe type. In July, August, and September 11 cases occurred, of which 9 died. Since the end of September until now 17 cases have occurred, all of which were treated with perchloride of mercury, and several of them were of great severity. All recovered, with the exception of two, who were only seen a few hours before death. In the Argentine Republic several physicians now treat diphtheria by the internal administration of perchloride of mercury with the best results. Dr. Fornos, residing in one of the towns in the interior, writes to me stating his experience of the treatment. In the town where he practises diphtheria has been very prevalent. In his practice the majority of severe cases had succumbed until,

[1] Mémoires on Diphtheria, Bretonneau, Trousseau, and others, New Sydenham Society.

[2] THE LANCET, March 24th, 1888.

[3] THE LANCET, April 3rd, 1886.

led by a monograph which I had published on the subject, he adopted the internal treatment by perchloride of mercury, and since then all his cases have recovered. He mentions one case specially where, in a child suffering from pharyngeal diphtheria, the disease extended to the larynx and tracheotomy had to be performed. After several days the membranes in the larynx began to spread again, when the internal administration of perchloride was exhibited, with the result that on the very next day the membranes were seen to diminish, as also the albumen which was present in the urine. Six days later the albumen and membranes had completely disappeared. Dr. Gie of Buenos Ayres had a remarkable case some years ago, in which the value of mercury in diphtheria was clearly demonstrated. He was called to see a child seven years of age suffering from this disease. The quantity of membranes in the throat and mouth was so enormous that he gave up all idea of local treatment and injected daily one centigramme of cyanide of mercury hypodermically. In about a week's time the throat and mouth were clear of all membranes. Unfortunately in this case the child died a few days later from cardiac paralysis. This result, however, does not invalidate the undoubted action which the cyanide had on the disease.

One of the earliest cases I treated by the internal administration of perchloride impressed me deeply with the beneficial action of the drug. I was called to see a child six years of age who had her fauces covered with membranes and who was in a very weak condition. I ordered her internally perchloride of mercury, tincture of iron, and chlorate of potash, and externally the insufflation of iodoform over the membranes. In three days her throat became clean, but the child became extremely pale and greatly prostrated. It was then a question to me whether I had to deal with an intoxication of the disease or of the drug I was using. I stopped the mercury, continuing with the rest of the treatment as before. In twenty-four hours the pharynx filled again with false membranes. The situation was critical, and I decided to readminister the mercury, with the result that the membranes disappeared, not to return again. Since I treated this case some years ago I have had an uninterrupted success in the treatment of diphtheria by the internal administration of perchloride of mercury *provided* that the cases have been seen at an early date. I have sometimes been called in consultation to see cases where the internal administration of the soluble salts of mercury was only commenced at the last stage, when the system was thoroughly poisoned with diphtheritic toxines. In these cases death has been the usual result.

It has been objected that the internal administration of the soluble salts of mercury does not constitute a rational treatment, inasmuch as the bacillus of Loeffler, not penetrating beyond the mucous membrane of the pharynx &c., leaves the blood without microbes over which antiseptics might exercise their destroying action. But the experiments of Kitasato and Behring have destroyed the value of this objection, proving, as they have done, that the diphtheritic toxines in the blood can be neutralised and rendered innocuous by appropriate chemical substances. If, therefore, experience proves the beneficial action of the soluble salts of mercury in diptheria, we are justified in believing that they act by neutralising the toxines with which the bacilli of Loeffler has invaded the circulation. But that the action of the soluble salts of mercury in diphtheria is not limited to their toxine-destroying power is evident from the manifest power which these salts possess in bringing about the disappearance of the false membranes; the alternate disappearance and reappearance of the membranes coinciding with the exhibition or interdiction of these salts has been a matter of observation in the treatment of diphtheria.[4] Sir Joseph Lister has remarked on the difference that exists between antiseptics which kill microbes and antiseptics which prevent their growth and development in different media. There are antiseptics which are powerful in their inhibitory and weak in their microbicidal action, and *vice versâ*. The undoubted fact that the internal administration of the soluble salts of mercury causes the false membranes to disappear (and that, as a rule, rapidly) presumes that their presence in the interstices of the mucous membrane, where the bacilli of Loeffler have laid a stronghold, will, if not sufficiently concentrated to kill these bacilli, be, at all events, sufficiently powerful to stop their development.

The treatment of diphtheria by mercurial inunction has been tried at the hospital for infectious diseases in this city and has proved a failure. The calomel treatment, as employed early in the century in France, gave only partial results. What has given the best results, wherever it has been tried, has been the internal administration of the soluble salts of mercury; but if the action of these salts is to be explained in the manner described above it is evident that, in order to ensure success, these salts must be administered early in the disease before the bacilli have gained too great a stronghold, from which they must be dislodged, and, above all, before the quantity of toxines in the blood has laid too low the vital powers of the patient, and for these same reasons the doses of the salts administered must be large. My personal experience has been with perchloride of mercury, and I have been surprised to see how well children will tolerate this drug; children between twelve and four years of age can easily take half a drachm of the liquor Van Swieten every two hours at first, then every three, every four, and so on until the drug is omitted. The best way to administer the liquor Van Swieten is to give it in milk. In this way the disagreeable metallic taste of the mercury is obscured. It is necessary that the liquor be well diluted, otherwise it may easily give rise to diarrhœa. The advent of diarrhœa is not, however, an indication to stop the mercury; it is rather an indication to increase the dilution of the drug, to add laudanum, or in some cases to diminish the dose or augment the intervals between its administration. During an epidemic of diphtheria, or where this disease has become endemic, every case of sore-throat where false membranes are present, and I would venture to advise even where these membranes are not present, should undergo an energetic treatment of mercury. It has not been an uncommon observation in this city to find that children have been suffering for several days from apparently simple sore-throats, during which time they have not been submitted to any serious treatment, when suddenly the disease has assumed a virulent type and the patient has succumbed. The explanation of these cases is that for several days the natural defence of the organism has so advantageously withstood the attack of the bacilli that constitutional symptoms have been present only to a very slight extent, but after a time the lines of defence have given way and the invasion of toxines has destroyed the patient. That there are organisms whose resources of defence are so powerful that they, unaided, can triumph over the diphtheritic invasion is a matter of frequent observation, but it is not given to a physician to distinguish these organisms, and it is therefore his duty to come to the aid of every organism on the slightest indication of attack. I am convinced that the secret of success in the treatment of diphtheria is to treat all cases from the very first as if they were severe ones.

With regard to the administration of iron this may be continued with the mercury; but for fear of upsetting the stomach I have lately been in the habit of giving the liquor Van Swieten alone at first, and afterwards administering iron and strychnine, this latter to prevent the advent of paralysis. I do not omit the use of local applications, of which there are so many, but the warning of Dr. Jacobi must be borne in mind when he states that children who are obstinately refractory to these applications may be much injured if they are insisted on. I believe firmly that local applications, prudently used, are a help to the internal administration of the soluble salts of mercury, but the sheet-anchor of practice must lie in the internal administration. I have never yet used hypodermic injections of mercury, but believe that in urgent cases or where the stomach will not tolerate the drug they are indicated, and I further believe that in desperate cases the intra-venous injection of mercury, such as has been recently recommended lately in Italy in malignant malaria, is likewise indicated.

Buenos Ayres.

[4] THE LANCET, Nov. 9th, 1889.

PULMONEA.

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MEDICAL OFFICER, CAYLLOMA, S. M. CO., PERU, S.A.

"PULMONEA" is a name given by the native Peruvian miners to an affection of the chest simulating acute pneumonia in the consolidation stage, and might easily be mistaken for it. In these altitudes (15,600 ft.) the sudden daily extremes of temperature (75° to 38° F. average) natural

to the climate, and the inhalation of the irritating dust of the dry stamps of the mills and smelting fumes, make cases of pulmonea of daily occurrence. Miners with pulmonea will present themselves complaining of inability to work, of a dull pain under the heart and between the shoulders, of cough and sometimes blood-spitting, and distress of breathing. Inspection of the chest shows increased and quickened breathing. There is increased vocal fremitus, with marked dulness on percussion and increased resonance over both lungs at the back of the chest—under, as it were, the seat of pain. Sometimes roughened breathing can be heard, but not tubular. However, there are no febrile symptoms, and the absence of these and the tubular breathing are the only differences between the two affections. I have made necropsies of two men whom I had previously treated for pulmonea, who had died from the effects of mining accidents, and in both cases I found the glands in the posterior mediastinum greatly enlarged, inflamed, and thickened, forming a compact mass in a situation which would just correspond to the seat of pain, and I have no doubt that these glands were the cause of the symptoms and physical signs which I have described. Their condition was probably caused by the irritating matter continually inhaled by the men. With regard to treatment, painting the back with iodine, and syrup of the iodide of iron given internally, with a few days in the fresh air, will remove all the unpleasant symptoms, but not the physical signs.

Cayllorna, Peru, S.A.

NOTE ON THE DISPOSAL OF DEAD BODIES.

BY SIR FRANCIS SEYMOUR HADEN, F.R.C.S.[1]

THE object of my attendance here to-day, I may say at once, is not to add another to the many papers I have written on our present irrational treatment of the bodies of the dead, or even to ply you with fresh arguments against cremation as a pretended improvement upon proper burial, but briefly to lay before you certain propositions elucidative of the facts of the case, and so leave it to be dealt with by the exercise of that common sense which, however diverted it may momentarily be by specious and impracticable theories, never fails in the end to reduce them to their proper proportions.

First let me state in the shortest possible terms what a naturalist would call the law of the case—the law, that is, which governs the disposal by its own unassisted agency of all dead matter, because unless that law is fully understood no one, however otherwise capable, is in a position to form an opinion, still less a judgment, on such a matter.

The law of the case, then, is this, that, inasmuch as everything that has lived dies, and everything that dies returns to the earth, it follows that the earth is, and has been since the world began, the daily and hourly recipient of a mass of dead and effete matter which is only equalled in amount by the sum of organic life going on upon its surface. Secondly, the earth is the sole agent in the disinfection and the chief factor in the resolution of the whole of this enormous and otherwise poisonous mass. Thirdly, this resolution, which is only another name for the re-entry into new and harmless combinations of this vast residuum, is but a necessary step to its revivification and reanimation—a condition precedent, that is to say, to a complete repair of all losses incurred throughout the globe by death and decay; to the maintenance of its populations and of all other forms of life, animal as well as vegetable; to the purification and replenishment of all rivers and springs; to the renewal of the atmosphere itself; and, in a word, to the re-formation and re-establishment, in all its luxuriance, healthfulness, and beauty, of the whole earth's surface.

And now, having stated a law which the Cremation Society will not hesitate to tell us it can improve upon, let me state a *fact* which I will venture to say some here present may, like Shakespeare, be unacquainted with. It is a not uncommon belief, for instance, that a buried body becomes part of the clay to which we commit it. A properly buried body, however, does nothing of the kind. A body properly buried—buried, that is to say, in such a way that the earth may have access to it—does not even remain in the earth, but returns to the atmosphere. Suppose a body buried three or four feet below the surface: the earth, as earth, affects it in no way whatever. The part played by the earth in its resolution is that of a mere porous medium between it and the air which is above it. Through this medium the air with its dews and its rains filters and, when it reaches the body, in chemical language, oxidises it—that is to say, resolves it into new and harmless products; and then these new products, passing upwards again through the same sieve-like medium, re-enter the atmosphere and become the elements of its renewal and of the nourishment and growth of plants. The body, in fact, literally as well as figuratively, ascends from the dead and fulfils the cycle of its pilgrimage by becoming again the source and renewal of life. The cremationist contention, therefore, if it mean anything means this, that, so far as the bodies of the dead are concerned, they are either an exception to and have no part in this dispensation, or that, forming a part of the common residuum, they are exempt from the operation of a law for its conversion the essence of which is its universality; and, further, that for some inscrutable reason to which this singular contention gives us no clue they have been left upon our hands to our especial hurt and detriment.

I contend, therefore, that what is wanted is not a Bill to regulate cremation—which, on the contrary, *as a measure of public safety*, ought rather to be at once declared a misdemeanour—but a Bill to regulate and ensure *safe and proper burial;* which Bill, to be effectual, should, besides dealing with the whole subject of cemeterial management, contain the following provisions: (1) for burial within the earth, as the only legal mode of disposing of a dead body; (2) for a limitation of time beyond which it should be illegal to keep a dead body unburied; and (3) for the illegality of strong coffins, brick graves, and vaults, and of all contrivances having for their effect to retard resolution and to confer on the dead a tenure, practically illimitable, of the soil which is necessary to the purposes of the living.

[1] Abstract of a paper read before the Congress of the British Institute of Public Health (Section of Preventive Medicine), July 27th, 1894.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF DILATED STOMACH.

BY P. W. YOUNG, L.R.C.P., L.R.C.S. EDIN., L.F.P. & S. GLASG.

ON March 6th a man, forty-seven years of age, consulted me for dilatation of the stomach. The history of the case is briefly as follows. For several years he had suffered from his stomach, pain after taking food, pyrosis, gastric uneasiness, and frequent attacks of vomiting being prominent symptoms. For the past three years he could take food, but in small quantities, and he was losing both flesh and strength rapidly. In 1892 he was treated in one of the London hospitals, and was for seventeen weeks an in-door patient in a local hospital, but left without having benefited by treatment. Upon examination I found the stomach occupying nearly the whole of the anterior part of the abdomen; the diaphragm was displaced slightly upwards. The chief distension was, however, in the umbilical and hypochondriac regions, with some slight depression in the epigastrium. Upon percussion and palpation it clearly showed that it contained both air and fluid. The patient did not complain of pain upon swallowing, but always suffered from gastric uneasiness at intervals of from two to three days, symptoms which were ultimately relieved by vomiting. The character of the vomited matter varied, some specimens submitted to me for microscopic examination containing both sarcinæ and the yeast fungus. There was no evidence of heart, lung, or kidney disease; the pulse was weak, and the patient had an anxious, careworn expression; the bowels were constipated. I commenced treatment with a portal purgative, and emptied the stomach with the stomach-pump, afterwards washing it out with a weak antiseptic solution, subsequently using a syphon

arrangement which was worked by the patient himself. The diet was restricted to peptonised preparations with white of egg, stale bread, and green vegetables, and as little liquid nourishment as possible. When any signs of putrefactive changes showed themselves I immediately washed out the stomach, and to procure complete antisepticity I ordered the following mixture: four grains of hydronaphthol, fifteen grains of salicylate of bismuth, and ten grains of bicarbonate of soda; to be taken in cachet form three times daily one hour after meals, and a tumblerful of hot water (temperature from 110° to 120° F.) to be sipped before mealtimes. After twelve days of this treatment a slight improvement showed itself, and at the end of the thirteenth week my patient no longer required the stomach to be washed out; he took nourishment well. The pyrosis was completely checked, and he talked of returning to work after an enforced period of idleness extending over nearly two years. My principal object in mentioning this case is to show the remarkable properties of hydronaphthol as an alkaline antiseptic when used in combination with salicylate of bismuth and bicarbonate of soda.

Broadgate, Lincoln.

CASE OF COMPLETE LATERAL DISLOCATION OF THE ELBOW-JOINT.

By C. S. SIMPSON, L.R.C.P. LOND., M.R.C.S. ENG.,
SENIOR HOUSE SURGEON, BRIGHTON AND HOVE DISPENSARY.

A PORTER at the Brighton railway station was brought to the Brighton and Hove Dispensary on May 19th, having fallen a distance of 6 ft. from a ladder upon the platform, falling directly upon the left elbow. On examination both bones of the forearm were found to be completely dislocated outwards, the olecranon lying external to the outer condyle of the humerus. The head of the radius lay in front of the olecranon, occupying the position of the coronoid process, for which, in fact, I at first mistook it. A bony prominence below the internal condyle was probably the fractured coronoid process. The bones of the forearm were pronated. The dislocation was reduced under chloroform without difficulty; but the case deserves to be recorded on account of its extreme rarity.

Brighton.

GALL-STONE PRODUCING ACUTE INTESTINAL OBSTRUCTION; OPERATION; RECOVERY.

By W. ARBUTHNOT LANE, M.S.,
ASSISTANT SURGEON TO GUY'S HOSPITAL AND TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

A PATIENT fifty-four years of age was admitted into Guy's Hospital on Tuesday night, April 24th, suffering from symptoms of acute intestinal obstruction, which had commenced at 3 A.M. on Friday, the 20th, more than four and a half days previously. From the commencement of the attack up to the time I saw her she had suffered from very severe griping pain at frequent intervals, from vomiting, and from constipation. She had been treated with opium, belladonna, and nutrient enemata. The material vomited was never fæcal. On her admission the abdomen was distended, very tender on pressure, and a distinct thrill could be felt on percussion. There was no evidence of any distension of the large intestine, and the character of the vomited material suggested that the distension was probably limited to the upper part of the small intestine. She had never been troubled by constipation. During the last three years she had suffered off and on from attacks of indigestion, during which she experienced much distension of the abdomen, with some tenderness on pressure. Two or three months after the appearance of the indigestion she was jaundiced for several days. There had never been any particular pain or tenderness in the region of the gall-bladder. Immediately on her admission I opened the abdomen by means of a long median incision, when a quantity of fluid more or less turbid in character and tinged with blood escaped. The upper part of the jejunum was very much distended, the walls being deeply injected and covered with lymph where the coils approximated. A gall-stone was found at the lower limit of the distended intestine, which involved about the upper eight feet of the small bowel that beyond the obstruction being quite empty. The stone was removed through an incision which was closed with a horsehair suture. The amount of distension was so considerable that very great difficulty was experienced in bringing the aponeurotic edges into apposition. Under the constant care of the resident medical officer, Mr. Freeland, she gradually regained her strength. I am putting this case on record as it is the first instance of intestinal obstruction due to gall-stone in which I have had an opportunity of operating. Such cases must be relatively very rare as compared to other causes of obstruction. The conditions presented at the operation were such as to render it probable that she could hardly survive the inflammatory changes consequent on the great distension of her obstructed intestine. It seemed that recovery was largely due to the absence of decomposable material in the bowel, the distension being almost entirely gaseous. I would point out that the symptoms presented by this case differed in no manner from those usually seen in obstruction of this part of the bowel by band or by the strangulation of a knuckle in a hernial sac.

St. Thomas's-street, S.E.

THE INGESTION AND PASSAGE OF A POCKET-KNIFE.

By G. B. GOODALL, M.B., C.M. EDIN.

THE following case is interesting as showing the toleration of the intestinal tract, even in the very young. At half-past eight on the evening of June 21st A. B——, a child two years

and eleven months of age, swallowed a pocket-knife just under three inches long, of the familiar shape—two blades, mother-of-pearl sides, and brass tips. On the evening of Monday, June 25th, the knife was passed by the rectum, and at no time did the child experience pain or even inconvenience.

Greenwich.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

WESTMINSTER HOSPITAL.

NOTES ON TWO CASES OF ENTERIC FEVER WITH EXCEPTIONAL NERVOUS SYMPTOMS.

(Under the care of Dr. STURGES.)

NERVOUS symptoms of the pronounced character described in the two following cases are by no means commonly present in enteric fever. True meningitis occurs sometimes, though rarely, at an early period of the fever, and is then attended with the symptoms displayed by the patient in the first case. Recovery from such a condition is very unusual. For the reports of these cases we are indebted to Mr. W. B. Winckworth, house physician.

The following notes refer to two patients, lads of seventeen and twenty years of age, both friends and from Westminster, but not living in the same house or having their meals together. The fathers of the lads are also friends, and it is possible that the two boys may have been infected from the same source and at the same time, as, for example, from a common food-supply. The cases have many points of resemblance, the striking feature in both being the marked nervous phenomena of a kind very rarely met with in connexion with enteric fever and hardly mentioned in text-books. In the younger patient, who had had a discharge from his right ear intermittently for years, these consisted

in severe pain in the head and along the spine, repeated tremors and attacks of rhythmical head-nodding, and general hyperæsthesia. The elder patient, the subject of old-standing heart disease, exhibited violent delirium lasting many days, marked and repeated rigidity of limbs, and, again, hyperæsthesia. These symptoms, more particularly described below, were so persistent in both cases that the diagnosis suggested was meningitis, spinal or cerebro-spinal, rather than enteric fever; this latter, though not wholly discarded, seemed improbable, not only from the symptoms just mentioned, but from the absence of characteristic stools and the retraction of the abdomen. As will be seen, however, the almost simultaneous occurrence of hæmorrhage from the bowel in both patients gave a new significance to the symptoms, and it presently appeared that in their issue, duration, and character of convalescence the cases closely tallied with what is commonly met with in the severe forms of enteric fever. Reckoning the seven days of cold sensation in the back as corresponding with the first period of the fever in the younger patient, and dating in the other case from the first attack of epistaxis, it will appear that the fever was in each case of thirty days' duration, and the occurrence of hæmorrhage, which was almost simultaneous, took place respectively on the twenty-first and twenty-fifth days.

CASE 1.—A boy aged seventeen was admitted to the Hallett Ward on May 21st, 1894. He had enjoyed good health since childhood, but he had had a discharge from his right ear intermittently for the last two years; he had always been a teetotaler. The family history revealed nothing of importance.

For one week previous to May 15th he had complained of cold sensations down his back, but had no pain. On that day he had pain in the head and back, with shivering, took to his bed, and remained there two days. Some days later he felt better and went to work. On May 21st he was again shivering and, having pain all over, was brought to the hospital. He had had no diarrhœa. He had a pinched appearance, was rather blue and poorly nourished. Temperature was 102° F., the respiration 28, the pulse regular and of good volume, 88; the skin was hot and dry; the tongue was very dry, covered with brown fur, and there were some sordes about the lips and teeth. He complained of frontal headache and pain along the spine; he slept heavily; he was hyperæsthetic all over; the plantar and other skin reflexes were much exaggerated. There was no ankle-clonus; the knee-jerks were normal; the pupils were equal; there was convergent concomitant strabismus, which had been noticed for years; the hands were slightly tremulous. The heart was apparently normal, the sounds being distinct. There was slight bronchial catarrh all over both lungs. The contour of the abdomen was natural. The bowels had been opened twice since admission; the motions were unformed; the colour of stools not unnatural; there were no spots; the fauces were normal in appearance, except for some dryness; the urine was acid and free from albumen.

May 25th (eighteenth day).—Prostration increasing. Is taking brandy (three ounces) and milk (three pints) in twenty-four hours. Still hyperæsthetic all over, complaining of severe pain in the spine; definite tremor of hands at times. Sleeps well; no delirium; deafness has increased; takes very little interest in anything which is going on in the ward. Temperature ranges from 101·4° to 104·6°, fairly constant, always lowest at midday; pulse-rate 92 to 104; respiration 26 to 32. Some increase in the bronchial catarrh. Motions partially formed; darkish colour. Sweats at times. Urine now contains a trace of albumen.

28th (twenty-first day).—Fundus of eyes examined by Mr. Hartridge; discs well defined; veins tortuous. Bronchitis and cough worse; patient propped up in bed. Whilst in this position he had an attack of head-nodding lasting ten minutes; the movement was not accompanied by loss of consciousness, and took place in both the horizontal and vertical direction. Had another similar attack at noon to-day, lasting twenty minutes; has now definite tremor of arms, more of the right than of the left, markedly increased on exertion or excitement. Abdomen not distended; diarrhœa less; motions of the same character and colour. Pulse and respiration as in last note; temperature ranges from 101° to 104°. Urine free from albumen.

29th.—Had two motions last night, the first containing dark altered blood, the second being free from blood. Abdomen rather distended, a few ill-defined spots of a pinkish colour, which disappear on pressure. Still drowsy, hyperæsthetic, and showing occasional tremor; no further head-nodding. Deafness increased; no discharge from ear. Had another motion this morning containing altered blood in considerable quantity. Temperature 101° to 103°; pulse 104; respiration 48; bronchitis increased.

June 1st (twenty-fifth day).—Prostration still marked; no further hæmorrhage; motions less frequent, light coloured, and of pea-soup consistency. Range of temperature rather lower; pulse 112; respiration 48. Cough and expectoration increasing.

2nd (twenty-sixth day).—Has given some difficulty with food. Less tremor; no head nodding; hyperæsthesia as before. Lies very low in bed in lethargic state; sleeps heavily; only speaks very rarely, preferring to answer questions by movements of the head; tongue not so dry.

4th (twenty-eighth day).—Temperature normal for twelve hours yesterday, afterwards rose to 100·8°, subnormal this morning. Tremor of forearms, especially right, increased on excitement. Motion once daily, light coloured, partially formed. Abdomen not distended; veins of abdominal wall full; no fresh spots. Takes more interest in what is going on around him, and complains of hunger for first time to-day. Pulse has gradually fallen to 72 and respiration to 36.

7th (thirty-first day).—Temperature remained below the normal line the whole of yesterday. Tongue cleaning. No tremor; reflexes normal; no hyperæsthesia. Sleeps a great deal, and is still rather drowsy.

11th.—Temperature subnormal since last note. Is very much brighter; much less deaf with left ear, but hearing with right ear has not improved. Sits up in bed now. Bowels constipated, relieved by an enema. Pulse has fallen to 50, respiration to 20. Tongue clean. Is taking milk, beef-tea, eggs beaten up, and a prepared food. Can remember most of the events connected with his illness.

CASE 2.—A young man aged twenty was admitted to the King William Ward May 18th, 1894. The patient had three attacks of acute rheumatism, first when aged ten, afterwards at fourteen and sixteen years of age. He lived well and was temperate in his habits. Both his parents have suffered from acute rheumatism. About three weeks before admission he began to feel weak and low-spirited, but had no pain. Two weeks before admission he had severe pain in the head. He suffered from profuse epistaxis on May 3rd and again on May 6th. He took to his bed for the first time on May 13th on account of weakness. The motions on the 16th were noticed to be dark coloured. He was unable to answer questions on May 17th, the day before admission to the hospital. He was said to have lost flesh during the last fourteen days. On admission (fifteenth day from first epistaxis) the condition of the patient was as follows: He lay low in bed, delirious, would not answer questions, but seemed to have some idea as to what was said to him. The temperature was 102° F., the pulse, fair volume, 110, and the respiration 28. The skin was hot and dry. The tongue was very dry and brown, there were numerous blood-stained sordes on the lips and teeth. As regards the nervous system, the patient lay in a position of slight general flexure on the left side, and was tremulous; he had very little sleep during the night, most of which he spent in trying to get out of bed. The plantar and other skin reflexes were much exaggerated. The pupils reacted to light. He passed urine in bed. The chest, the lungs, and the breath sounds were normal. There were a few moist added sounds. The apex beat was felt in the fifth interspace, inside the nipple line. Cardiac dulness was normal; there was a systolic murmur at the apex, conducted down the sternum and a soft diastolic murmur of short duration at the aortic cartilage. The abdomen was retracted; the liver and splenic dulness were normal. Over the abdomen and back were several rose-coloured spots which disappeared on pressure, except a few which were petechial.

May 21st (eighteenth day).—Prostration increasing; still tremulous; arms and legs are absolutely rigid at intervals; has been much quieter during the last two nights during which he has been watched by a male nurse; has had several hours' sleep and made fewer attempts at getting out of bed. Temperature ranging from 101 to 103°; pulse 120, has been as rapid as 140; respiration averages about 20; bowels open once; motion small, dark, and formed; abdomen still retracted; no fresh spots; sweats freely; perspiration has rheumatic odour. Is taking three pints of milk and three ounces of brandy daily.

24th (twenty-first day).—Understands when spoken to, but has not spoken yet, although he makes attempts at speaking. Large quantities of thick, sticky mucus constantly collecting

in the mouth. Temperature 102° to 104°. Bowels relieved by enema this morning; motion large, for the most part solid, not of light colour; abdomen still retracted. Legs and arms are still rigid; plantar and other skin reflexes still much exaggerated. Has passed urine into vessel for first time to-day; specific gravity 1034, acid, free from albumen; sweats freely; abdomen covered with sudamina; no fresh pink spots.

26th (twenty-third day).—Still delirious at times, at other times takes an interest in what is going on around him. Speaks very indistinctly, and is rather deaf. Very tremulous and rigidity more marked. Sleeps better. Bowels not opened since enema on the 24th. Pulse-rate has been as high as 144, respiration up to 34.

28th (twenty-fifth day).—Prostration and limb rigidity increased. Temperature fell yesterday to 101° for some hours. Was given enema (ten ounces of soap and water) this morning, first portion of motion formed and normal colour, this was followed by blood-stained matter and a considerable quantity of dark altered blood; a few hours afterwards had another motion containing blood. Abdomen distended to-day for first time. Temperature 104°.

30th (twenty-seventh day).—Still delirious at times, talks better; less mucus. Sordes less. Tongue still dry; no motion yesterday, two to-day, the first partially formed and blood stained. Abdomen still distended, no fresh spots. Temperature last night was 104°, a degree only once reached since admission. Pulse, 112, respiration 28.

June 2nd.—Less prostration, rigidity not so marked. Temperature has remained below 100° since May 30th. Bowels acting naturally, motions formed.

5th.—Temperature has not been above 99·2° since last note; generally subnormal. Tongue nearly clean, lips rather pale. No rigidity, can move limbs freely. Reflexes normal, no hyperæsthesia. Pulse 88, respiration 20.

11th.—Patient sitting up in bed, much improved in strength. Temperature remains subnormal, cardiac condition as on admission, lungs much clearer, tongue clean. Is taking milk, beef-tea, and a prepared food. Says that he can recollect being brought to the hospital, but from that date until June 2nd can remember nothing.

SOUTH DEVON HOSPITAL, PLYMOUTH.

A CASE OF DOUBLE EMPYEMA TREATED BY SIMULTANEOUS INCISIONS; RECOVERY; REMARKS.

(Under the care of Dr. E. L. FOX.)

THE subject of double empyema has received a considerable amount of notice in THE LANCET during the course of this year.[1] That patients who are suffering from the accumulation of pus in both pleuræ are in a serious state, one which will require the greatest care and skill in treatment to prevent a fatal result, few will deny. The mortality is undoubtedly considerable, but it varies much according to recently published estimates. Mr. Wightman says that out of seven cases admitted to the Infirmary for Children, Liverpool, six died; Dr. F. E. Batten gives eight cases as treated in the Hospital for Sick Children, Great Ormond-street, with five recoveries and three deaths (one of them from diphtheria); whilst Dr. G. A. Sutherland, not including these, in a later contribution to our columns, in a collection of published cases gives twenty-one, with only one fatal result. Dr. Sutherland's list might be enlarged, showing a very similar result, there being other cases published the result of the treatment of which was equally good. Hospital statistics undoubtedly give a much more accurate idea of the mortality of the disease, because only successful cases are published. As regards treatment, we have seen repeated aspiration employed and prove effectual, but as a rule the purulent fluid does not reaccumulate. The conclusions of Dr. Coupland and Mr. Gould[2] on this question are worthy of recapitulation—viz.: (1) that the occurrence of double empyema, instead of being a bar to treatment by drainage, renders the need for such an operation more urgent on account of the greater embarrassment it causes to respiration and circulation; (2) that aspiration should be practised as a preliminary procedure, in the hope that at any rate some contraction of the abscess cavities may result from it and further adhesions of the pleura form; (3) that it is better to allow a few days to elapse between the two operations; and (4) that if this delay is for any reason impossible the two empyemata should be carefully aspirated a few hours before the operation. By this means the shock produced by the sudden removal of pressure from the lungs is got over, and the simultaneous drainage of the two pleuræ is robbed of its chief danger.

A girl twelve years of age was seen by Dr. Fox on Jan. 11th of this year in consultation with Mr. Cheves of Liskeard, when double pneumonia was well marked, involving the bases of both lungs. The pneumonia had followed an attack of influenza, and there were three other similar cases in the same house. With the exception of some gastro-enteritis the pneumonia ran an ordinary course. On Jan. 25th Dr. Fox saw the child again, the resonance over the base of the right lung then being impaired and the breath sounds feeble. An empyema was diagnosed and aspiration suggested. Nothing, however, was done until Feb. 5th, by which time the child's condition and physical signs had materially altered for the worse; the dulness on the right side had not increased, but there was dulness over the left base extending forwards to the anterior axillary line. Aspiration was performed and fifteen ounces of pus were removed from the right side and thirty-five ounces from the left. By Feb. 10th an operation had become imperative, and as she resided a long way from Liskeard she was brought to Plymouth and placed under Dr. Fox's care. She was very weak on her arrival, with frequent facial twitchings and an uncountable pulse. The physical signs in the chest were much the same as before aspiration. In the left buttock there was a good deal of swelling and an abscess had evidently formed there; the abdominal walls were hard and the abdomen contained fluid. There was no abdominal pain or tenderness. On Feb. 11th Mr. Swain (assisted by Mr. Lucy) made an incision into each pleural cavity and into the abscess in the buttock, sixty ounces of pus being collected. The incisions were made rather behind the post-axillary line, between the ninth and tenth ribs. The child, though extremely weak, recovered from the shock of the operation fairly well. On Feb. 16th her weakness became so extreme that dissolution seemed imminent; however, with injections of strychnine, inhalations of oxygen, and free use of brandy her condition improved and never again gave cause for immediate anxiety. In a little more than three weeks, the discharge having decreased to almost *nil*, the tubes were left out. There was a small reaccumulation on the right side, and a tube had to be inserted for a short time. Convalescence was slow, but it was otherwise uninterrupted, and she left for Newquay on April 7th. Her condition there was one of considerable debility. She was able to walk unassisted, but stooped a good deal. The resonance over both bases was considerably impaired and the breath sounds were feeble. She was instructed to go through a variety of chest-expanding exercises and to continue her respiratory exercises. She improved rapidly at Newquay, and when seen last, on June 4th, she had the appearance of an upright, healthy child, her general health being better than it had been for some years before her illness. There was still some impairment of the resonance and breath sounds over the extreme right base, but otherwise her lungs were normal.

Remarks by Dr. FOX.—This case has been deemed worthy of reporting owing to the rarity of the disease affecting both sides of the chest, the extent to which it had advanced, and the success which attended the simultaneous incision into both pleural cavities, a proceeding which, as far as I am aware, has not been adopted before. The child was an exceedingly neurotic one, and it was for this reason decided to avoid two operations if possible. Chloroform was first used, and then, as soon as she was sufficiently under, ether was employed. This she took extremely well, and I believe it was largely due to the employment of this anæsthetic that the operation could be finished without any anxiety. It is worthy of note that on neither side was a rib excised, and although the accumulations were large the drainage throughout was satisfactory. No change was noticed after the incision had been made into the second pleural cavity, and her condition was certainly not materially affected by it. Whether the abscess in the buttock communicated with the pleural cavity or not could not be definitely decided, but from the facts that it tracked upwards, was on the side of the greater pleural effusion, and the rapidity with which the discharge ceased after the operation, I am inclined to believe

[1] THE LANCET, Mr. J. P. Wightman, May 5th, 1894; Dr. O. Sturges, May 12th, 1894; Dr. F. E. Batten, June 2nd, 1894; Dr. G. A. Sutherland, June 9th, 1894.

[2] Transactions of the Clinical Society, vol. xxiv.

that it did so communicate. The fluid in the abdomen I believe to have been due to an extension of the inflammation through the diaphragm, possibly assisted by the obstructed circulation through the lungs. The temperature at times was most erratic and puzzling, rising from normal to 103° F. on excitement alone, and on her first going downstairs on two occasions it reached 108°. I gratefully acknowledge that to Mr. Swain the successful termination of this case is largely due.

Reviews and Notices of Books.

An Introduction to Midwifery: a Handbook for Medical Students and Midwives. By ARCHIBALD DONALD, M.A., M.D., C.M. Edin., M.R.C.P. Lond., Surgeon to St. Mary's Hospital for Women and Children, Manchester, and the Manchester and Salford Lying-in Institution. With numerous illustrations. London: Charles Griffin and Co., Limited. 1894.

DR. DONALD has aimed at producing a handbook containing everything likely to be required by either the medical student or midwife in the course of their attendance on cases of natural labour, and he especially disclaims any intention of teaching the treatment that is needed in the presence of complications or irregularities during pregnancy, labour, or the lying-in period. In such cases the student or midwife must send for the assistance of a qualified practitioner. The author, however, only omits the treatment required in abnormal cases; he defines and describes the abnormalities themselves. Thus, in the case of placenta prævia, the condition is defined, and its varieties, causes, symptoms, and prognosis are clearly described; when we come to treatment, however, we are told that "in all cases in which there is a well-marked discharge of blood in the later months of pregnancy the student must at once hand over the case to a qualified medical man." This is a good example of the scope of the book. The relations of the ovum to the uterus during the early months of pregnancy—a part of the subject that not infrequently presents some difficulty to the beginner—are clearly described. In studying the mechanism of labour the student is very properly advised to follow the description with a fœtal skull and pelvis. Dr. Donald's teaching of the important matter of antiseptics in midwifery is thoroughly sound, and we cordially agree with the opinion expressed in the sentence with which his chapter on antiseptics opens: "The most common danger which threatens the life of the lying-in woman is the so-called puerperal or childbed fever; and it is of the greatest importance that all who are liable to be called to attend a woman in labour should be impressed with the fact that it is a danger which may be prevented." The practical directions given for disinfection of the hands are excellent, and the use of glycerine containing half a grain of corrosive sublimate to the ounce is recommended as a lubricant for the examining finger. Dr. Donald has succeeded in producing a handy little book, well adapted for the use of those for whom it is intended.

Organic Chemistry. Part I. By W. H. PERKIN, jun., Ph.D., F.R.S., and F. STANLEY KIPPING, Ph.D., D.Sc. Lond. London and Edinburgh: W. and R. Chambers, Limited. 1894.

THE plan of this small text-book, which was originally intended to be "based on the syllabus drawn up by the Science and Art Department in the hope that it would be useful to students attending the elementary or advanced classes in the subject," is one which, on the whole, we think, appeals most satisfactorily to the student who is shortly to be brought face to face with the intricate, and ever increasingly intricate, subject of organic chemistry. The original intention of the authors was, however, departed from, since it soon became apparent that "by making comparatively few additions the subject-matter might be made to include the facts usually dealt with in the course of about sixty lectures; the scope of the work was accordingly enlarged to this extent, so as to make it at the same time more useful to general students as an introduction to organic chemistry." As we should expect from two chemists who have taken a very active share in recently extending our knowledge of the carbon compounds, the subject is very clearly, and, considering the compass of the book, adequately treated; but on this account we think it a pity that they decided to issue the work in two parts. In one volume it would have been a handy and valuable manual for most students who are required to possess a knowledge of the fatty as well as the aromatic series of compounds; Part I., however (the volume before us), deals exclusively with the fatty compounds, so that this alone, to quote one case, will not satisfy the wants of the medical student, for to study the benzene compounds and derivatives he must await the issue of Part II. or, in the meantime, consult another work.

LIBRARY TABLE.

A Short Historical Account of the Andersonian Professors of Chemistry and the Work they have done. By HUGH H. BROWNING, M.A., B.D. Glasgow: William Hodge and Co. 1894.—On the occasion of the closing address of the session of the Andersonian Chemical Society on May 6th, 1892, Mr. Browning chose as his subject the theme above given and has handled it with a skill and effect which amply justify its publication in the handsome and well-illustrated volume before us. A vigorous sketch of Professor John Anderson, F.R.S., the society's founder, introduces us to the successive occupants of the Chemical Chair, Thomas Garnett being the first and Professor Henderson the latest in the series. Of these eminent *savants* Mr. Browning gives us brief but quite adequate characterisations and incidentally touches on the history of chemistry for the last hundred years. In some respects the most interesting—certainly the most original—figure in his gallery is Professor Thomas Graham, much of whose best work—the discovery of the alcoholates, the researches in the arseniates, the phosphates, and the modifications of phosphoric acid, and the celebrated paper on Hydrated Salts and Metallic Oxides, with Observations on Isomerism—was performed during his connexion with the Andersonian school. Equally well portrayed, though less striking as to character and achievement, are William Gregory and Frederick Penny, both of them chemists of rare accomplishment and expository power. Professor Thorpe, too, is ably delineated; while a strain of personal affection runs through the scientific appreciation of that last great Andersonian light, Professor Dittmar, so recently and prematurely lost to chemical investigation and teaching. Mr. Browning's work, with its letterpress and its illustrative matter, is a welcome contribution to the history of science—a chapter, in fact, in its chemical department, equally commendable for its lucid exposition, its touches of human interest, and its vivid, unaffected style.

Formulaire des Eaux Minérales de la Balnéothérapie et de l'Hydrothérapie. Par le Docteur DE LA HARPE. Introduction par le Dr. DUJARDIN-BEAUMETZ. Paris: Baillière et Fils. 1894.—In his introduction to this work Dr. Dujardin-Beaumetz regrets that the therapeutics of mineral springs are a subject almost totally neglected in France. He says truly that the practitioner on entering upon his life-work will often be embarrassed by the very natural expectation of his patients that he should be able to indicate the waters most suitable to their ailments. He deprecates the idea that these waters differ but slightly in their influence upon the organism and

may be prescribed almost haphazard, and advises that, when practicable, a visit to the chief spas should form part of the medical curriculum. Dr. De la Harpe, who teaches balneology in the University of Lausanne, has discharged his task with care and skill, and his work presents in a small compass a large amount of accurate and useful information on the subject of which it treats. He discusses at considerable length the general principles of balneology and hydropathy, and then gives in tabular form a short but fairly complete summary of the climatic and balneological features of the chief European spas. The general features of each resort, the characters of the climate, the number and chemical composition of the various springs, the modes in which the waters are employed, and the indications and contra-indications are duly set forth. The spas of France and Savoy come in for the larger share of attention, but those of Germany and Austria are also fully considered. The author's references to Great Britain are less satisfactory. He gives a fairly good notice of Bath and Cheltenham, but ignores Harrogate, perhaps the richest and most varied spa in Europe, and does not seem to have heard of Tunbridge, Ilkley, Moffat, or Strathpeffer. On the whole, however, this little work is carefully compiled and should prove of real utility.

Health Teaching in Towns and Villages—Rural Hygiene. By FLORENCE NIGHTINGALE. London: Spottiswoode and Co. 1894.—This pamphlet is a reprint of a paper read at the Conference of Women Workers held at Leeds from Nov. 7th to 10th, 1893. After describing the present mode of administration of a rural district and depicting the unhealthy sanitary conditions under which the rural population often live the lecturer proceeds to point out how women might be of signal service in ameliorating the unwholesome surroundings of the poor in country districts by introducing health and happiness where squalor and misery now reign. Miss Nightingale pleads for the appointment of lady health missioners, who should accompany the medical officer of health on his rounds and obtain from him their practical training in rural sanitation. These ladies should subsequently be subjected to examination, and only certified as competent for their work after passing a satisfactory test, after which they might in their turn undertake the training of probationers for similar employment. The task which Miss Nightingale prescribes will probably be a long and arduous one before it is brought into working order; but her aim is a noble one and deserves our hearty sympathy and encouragement.

JOURNALS.

Teratologia: Quarterly Contributions to Ante-natal Pathology. Edited by J. W. BALLANTYNE, M.D., F.R.C.P. Edin., F.R.S. Edin. London: Williams and Norgate. 1894.—We have before us the second number of this periodical. The importance of the subject with which it is concerned is manifest. Much may be learned from failures in every sphere of nature, physical and mental. The débris of a workshop may be instructive. This periodical, however, devotes its attention also to congenital diseases and thus has opened up a large field for practical usefulness, as it is evident from the contents of the volume that in the term are included other than teratological conditions. The first article in this number is by Dr. Fordyce, on Intra-uterine Ascites, and gives a careful description, clinical and necroptical, of a case which came under his own observation, as well as a good summary of the literature of the subject. Mr. Baxter Tyrie and J. W. Haigh relate a case of Phocomelus, and Dr. Ballantyne one of Hypospadias. Not the least valuable portion of the volume is that which gives an abstract of current literature. The editor's work in this sphere of research is well known, and it augurs well for the success of the work that so capable a man has undertaken its supervision.

Brain: a Journal of Neurology. Summer Number. 1894. London: Macmillan and Co.—The spring and summer numbers of *Brain* have appeared, if not simultaneously, at considerably less than the usual interval, but we venture to think that no one will grumble, but will rather bewail the difficulty in finding time to enjoy to the full the exceedingly interesting contents of both numbers. To the spring number we have already referred in our columns. The summer number has a table of contents which will appeal to the varied tastes of neurologists. Dr. Hack Tuke discusses Imperative Ideas most interestingly and gives many examples, a few of course being familiar, although the majority are novel. To this contribution we refer in a leading article this week. Two articles on Graves' Disease, another on Classification of Reflex Actions, a clinical case and exhaustive critical digests on Exophthalmic Goitre and Hysteria and Neurasthenia, an article by Dr. Bowman on Cord Changes, and two reviews make up, as will be seen, a full and interesting number.

Archives de Neurologie. June, 1894.—The last number of this journal has for its principal article one by Dr. Chabbert, on a case of General Paralysis in a Syphilitic Patient, the case at first appearing to be one of tabes dorsalis. The Curious History of Barbe Buvée, which has been a feature of some recent numbers, is here continued but not concluded, and the accounts of societies and of the recent literature of nervous disease are of the usual succinct and satisfactory character.

Analytical Records
FROM
THE LANCET LABORATORY.

TEA TABLOIDS.

(BURROUGHS, WELLCOME, AND CO., SNOW HILL-BUILDINGS, E.C.)

THAT these tabloids give a result which may be regarded to be physiologically as satisfactory as is given by choice specimens of tea is evident from the fact that we succeeded in extracting an amount of the alkaloid caffeine, or theine, from four tabloids equal to the amount similarly extracted from a teaspoonful of the finest Congou. Nor does the infusion of the tabloids lack the generous flavour and aroma of a good leaf infusion prepared in the ordinary manner. Two tabloids, according to our assay of the alkaloidal constituents represented in theine, being equal to half a teaspoonful of leaf, should be dissolved in a teacupful of boiling water (or four tabloids in a breakfastcupful) in order to obtain a liquid of desirable strength and character. The tabloids undergo no objectionable changes by being kept, while the delicate, fragrant aroma of tea is present. Tea in tabloid form, besides offering the advantage of easy portability, is a departure of probable dietetic importance since the quality of the leaf is ensured, which, too, as it exists in finely powdered form, is speedily extracted, so that on quickly decanting or straining the hot liquid the beneficial extractives are retained and the injurious rejected.

INVALID CLARET.

(SOCIÉTÉ VITICOLE FRANÇAISE, WESTMINSTER-CHAMBERS, 13, VICTORIA-STREET, S.W.)

When claret is permissible for invalid use it should obviously be as free as possible from the roughness and excessive acidity which commonly characterise wines containing an undue amount of tannin and acid extractives. Such is the wine above described, which has doubtless been selected on this account. On analysis the following figures were

obtained: alcohol, by weight 10·08 per cent., by volume 12·49 per cent.; extractives, 2·60 per cent.; mineral matter, 0·22 per cent. The wine is free from objectionable preservatives, and we have obtained no evidence that it is other than a pure natural product.

(1) "SYMPHOROL," A NEW DIURETIC; (2) "SENALIA" SOA .
(JEYES' SANITARY COMPOUNDS CO., LIMITED, 43, CANNON-STREET, E.C.)

"Symphorol" is suggested as a new diuretic, and is in reality the sodium salt of caffeine-sulphonic acid. It is well known that the main characteristics of caffeine that have made its action as a diuretic unreliable, or have in some cases contraindicated its use, are its irritant action upon the nerve centres and its contractile effect on the vaso-motor centres. The introduction of a sulphonic group into compounds possessing an action on the nervous system annuls this action completely, according to the observations of Dr. Heinz and Dr. Liebrecht. "Symphorol" is a white crystalline powder, free from smell, and possessing a bitter taste resembling quinine salts. It dissolves in cold, but more readily in warm water, and is only slightly soluble in alcohol. Treated with nitric acid, or with a chlorine-yielding mixture, it behaves like caffeine—that is to say, it yields the murexide reaction. On ignition part burns away, and the residue contains sulphate of sodium. Its diuretic action is unmistakable, while it does not appear to produce unpleasant secondary symptoms. It is an interesting example of a so-called synthetic remedy—i.e., a remedy into the constitution of which a new chemical group is introduced with the object of modifying its therapeutic or remedial action. "Senalia," a soap made by the same company, is evidently the product of a very careful saponification, since it is free from excess of alkali and moisture, and is, in fact, "trebly milled" and "superfatted." It is very delicately scented, and imparts an agreeably emollient sensation to the skin.

BAKING POWDER.
(A. E. MOORE, 10, BRIDGE-STREET, DARWEN.)

It is enough to say of this powder that while it gives off on moistening a copious evolution of carbonic acid gas it contains no alum or other injurious materials. The powder consists of a mixture of tartaric acid and bicarbonate of soda, made temporarily compatible, so to speak, by means of starch. Its composition is therefore satisfactory, and in accordance with the requirements laid down in an investigation of this subject by THE LANCET Analytical Sanitary Commission on Yeast Substitutes, with especial reference to the Use of Alum in Baking Powders.[1]

(1) ITALIAN EUCALYPTUS COMPOUNDS; (2) EUCALYPTINE; (3) CHIANTI; (4) ITALIAN CHAMPAGNE.
(EGIDIO VITALI, 5 AND 6, GREAT WINCHESTER-STREET, E.C.)

Amongst other excellent Italian products some interesting eucalyptus compounds, prepared by the Trappist Fathers at Tre Fontane, near Rome, have been recently submitted to our notice. They owe their origin to the observation that was made of the utary influence produced on the inhabitants when eucalyptus groves were planted in certain malarial districts and marshes of Italy, and particularly at St. Paul. The "extrait pur d'eucalyptus" is a strong alcoholic solution of the oil and principles of the eucalyptus globulus leaf. It turns milky with a little water, and evolves a powerful but fragrant smell of eucalyptus, which, being concentrated, resembles camphor. A similar preparation is the "élixir d'eucalyptus," except that it contains syrup, which adds an agreeable sweetness to the aromatic taste. The liqueur (eucalyptine) is made on the same basis as Chartreuse, and compares well and favourably with better-known compounds of this class, whilst certain medicinal properties of the preventive order, referred to the eucalyptus extractives it contains, are traditionally ascribed to it. On analysis the following results were obtained: alcohol, by weight 31·56 per cent., by volume 37·97 per cent.; sugar and extractives, 35·4 per cent.; mineral matter, *nil*. Another excellent product of Italy—Chianti wine—is too well-known to need further comment beyond that the following analysis, recently made, gives further evidence of the genuineness of the wine, and confirms the impression conveyed to the palate that it is a moderately-bodied wine of a wholesome character although somewhat more styptic and acid than the light clarets of Bordeaux. An analysis gave the following result: alcohol, by weight 9·57 per cent., by volume 11·87 per cent.; extractives, 2·47 per cent.; mineral matter, 0·20 per cent.; total acidity reckoned as tartaric, 0·85 per cent. A still more recent product of this fruitful country is a champagne which competes closely in character with the same type of wine produced elsewhere. It is agreeably dry, and therefore free from objectionable excess of saccharine extractives.

ELIZABETH SPRING.
(BENEDICTINE ABBEY, MARIA LAACH; LONDON: ST. PETER'S HOUSE, 142, CLERKENWELL-ROAD, E.C.)

On analysis this water proved to belong to the class known as alkaline and carbonated. It yielded on evaporation 211·4 grains solid matter, 81·9 grains of which consisted of bicarbonate of soda, and 129 of common salt. It affords, doubtless, an aid as an agreeable antacid, and mixes well with milk or spirits, but it is either unsatisfactorily charged with gas or, as is more probable, it is badly corked or stored, for many of the samples submitted had lost their gas.

[1] THE LANCET, March 3rd, 1894.

New Inventions.

MEDICINE TIME INDICATOR.

As will be seen from the accompanying illustration, this invention consists of a label or tablet, upon one side of which the numbers from 1 to 12 are printed, and upon the edge opposite to the numbers a pointer or index is so affixed that it can be readily made to point to either of the figures. The inventor claims two advantages for this device: firstly, the time at which the last dose of medicine was taken or the time when the next dose should be given can be easily

indicated; and, secondly, that by reason of the indicating arrangement the patient or nurse can distinguish at a glance bottles containing medicines for internal use from those containing preparations for outward application. In view of recent calamities in hospital practice as well as in private houses, any idea, however simple, that is likely to obviate these terrible errors deserves respectful attention. Mr. J. Feaver, 83, Croydon-road, Anerley, S.E., is the patentee.

A POISON ALARM SIGNAL.

THIS again is a simple device for the prevention of mistake in the administration of poisonous remedies, and should prove effective. It consists of a small bell fastened to a capped cork, so that the bottle to which it is attached by means of a cord cannot be taken up without producing a tinkle loud enough to warn the nurse even in the dark or twilight, but not sufficiently so to disturb the patient. The contrivance is obviously extremely simple, and yet one which may avert lamentable mistakes, and we commend its practical trial to our readers. The cost can be no drawback, since the "alarm signal" may be had in packages containing a gross (assorted sizes) for twelve shillings from the patentee, E. J. Orchard, Market-place, Salisbury.

THE LANCET.

LONDON: SATURDAY, AUGUST 18, 1894.

NEARLY sixty years have passed since THOMAS WAKLEY, Editor of THE LANCET and member of Parliament for Finsbury, gave notice in the House of Commons that he would move for the appointment of a Select Committee of the House to inquire into the efficiency of the treatment provided for the sick poor in the parishes under the Poor-law Amendment Act. This was followed by the appointment of a committee consisting of twenty-one members. This was not the first time that the voice of the Founder of THE LANCET had been heard invoking inquiry into the conditions which called for reform in the Poor-law system of administration. The inefficient administration of all sections of this department had been ruthlessly exposed. To take a few instances out of many, the mode of dealing with lunatics and the Parliamentary action relative to the madhouses were unsparingly condemned. When cholera invaded Coldbath Fields Prison in 1832 the treatment of the prisoners was denounced by Mr. WAKLEY, and it was in that same year that his efforts bore fruit and enabled him confidently to predict in reference to the anomalies which existed under the Poor-law system "that the time would come when Ministers under the Crown and the representatives of the people would divide the country into districts under officers of public health."

It is an old story now, but it is worth recalling at the present juncture. His action did not go without appreciation at the time, and several medical associations accorded him resolutions thanking him for the "zeal and ability" with which he supported the profession against the impolitic, oppressive, unjust, and somewhat inhuman proceedings of the Poor-law authorities. True it is that there were in those days, as there are now, Poor-law Commissioners, whose functions were administered as quacks administer their nostrums, without subsequent inquiry into the fate of the patients. Mr. WAKLEY failed not to point out the insanitary conditions of the workhouses and the consequent propagation of innumerable diseases, leading to a mortality of which the country could have no conception. It could not in those days be otherwise when parish medical men were advertised for by boards of guardians "to attend the poor of ten parishes at the rate of one guinea per parish per quarter." No officers working under the Crown were so ill-paid as union medical officers. They were offered starvation salaries. The guardians advertised then, as they do now, for the cheapest men without reference to relative efficiency. But the efforts of THE LANCET at reform did not end here. We denounced the odious and baneful system under which those men were elected who were to become the fictitious "guardians" of the poor. The conditions under which the State poor were housed were a "disgrace to our civilisation"; these conditions were brought to light by our appointment in 1865 of "A Sanitary Commission to Investigate the State of the Infirmaries of Workhouses." In this way we exposed the faults in the construction of these buildings and their consequences, the terrors of bad nursing, the comfortless fittings and surroundings, the deficient and improper dietaries, and the mortality and sickness which arose from these deplorable arrangements. There can be no shadow of doubt that considerable reforms in the Poor-law system were thus directly attributable to the work of THE LANCET, the sole credit for which is, we regret to observe, being unwarrantably claimed by certain persons who assisted THE LANCET in a purely subsidiary manner, and who were employed by us merely as our agents by whom the investigations were to be carried out. The results of these investigations were published, as we have said, in the volumes of THE LANCET of 1865.

Mr. SHAW-LEFEVRE received a deputation recently on this subject, and listened to many arguments which have been fully advanced and published long ago. The same defects have been pointed out and the same remedies proposed for many years. It would be interesting to learn the reason why they have not been carried into effect. We are glad, however, to learn that arrangements are being made to undertake some further inquiries into the conditions which exist with regard to the education of the poor children of the State.

It seems to be a matter of congratulation in the opinion of the President of the Local Government Board that sixty years after the defects of the Poor-law system have been exposed and remedies suggested, the condition of the system is not so bad as it was. The public desire to know why it is as bad as it is, and why the doors of public institutions are, as it appears, by law shut in the faces of their representatives, and why defects which have already been pointed out have not been remedied. No good can come of concealing defective organisation which has such painful results. Surely it is a sad commentary on the working of this Poor-law system when the training and accomplishments of the gutter boy or girl can be favourably contrasted with those of the poor children who are nominally nourished and fostered by the State. Mr. SHAW-LEFEVRE has pointed out that the alleged failure of our Poor-law system is based upon the prevalence of ophthalmia, of skin affections, of degeneration, and of the production of evils both physical and moral. The system has produced the usual effect which a travesty of discipline is likely to have upon helpless children, on whom fate has bestowed the name and the degrading livery of the "pauper." The naturally good qualities which should have been carefully and tenderly developed have given place to the "pauper temper." The child has been rendered suspicious of those in authority and incapable of self-reliant action. The treatment has produced upon the children such a condition of mind that "it takes a year to knock the nonsense out of that sort of lad." The Poor-law system has provided these children with "keepers" instead of "teachers," with "castigators" instead of "educators." These are points upon which any inquiry should endeavour to throw light. The system generally adopted has made children feeble, defective, unready, and even imbecile. It has done so from the beginning. It was of this that Mr. WAKLEY wrote in

1834:[1] "Independently of the cruelty and inhumanity of subjecting children to such unnatural treatment and withholding from them that protection to which they are entitled, every circumstance which interferes with the progress of education ought at once to be condemned and removed."

These points certainly deserve most careful inquiry, and it is earnestly to be hoped that any new Committee will not, as we fear is proposed, restrict itself to ascertaining whether the State poor can be best housed and trained in huge schools or in medium-sized ones. Doubtless it is important to ascertain this; but it would be vastly more effective to ascertain the nature of the qualifications of those who are responsible, not only for departmental work, but for that of inspection. It was through THE LANCET that the first inspector was appointed.[2] It appears now that the system, as it has been carried into operation—not, we may add, in detail in accordance with our recommendations—has not been successful. The inspectors themselves and those who made the appointments have both failed. We venture to set forth as an axiom that no one ought to be appointed to these responsible offices who has not some previous knowledge of, and training in, this particular work.

How this knowledge and training are to be obtained is a question deserving most serious notice. Previous experience in executive and administrative work seems to be an obvious essential, but with very few exceptions the officers appointed have received in their previous official lives no special training whereby they were likely to become qualified for their work. Their knowledge of educational methods has not been derived from scientific study of the subject, without which it is impossible to direct the education of large masses of children.

Other special subjects connected with the Poor-law administration demand attention. Any inquiry into the working of our Poor-law system should be carried out on the broadest possible lines. The evils are well known and unquestionably demand removal. Remedies have from time to time been suggested, but only a few of them have been adopted. Of no other branch of the Legislature can it be said that nearly every improvement or reform has been effected as the result of the disclosure of some scandal attributable to one or other weak point in the system. Serious efforts will, we trust, be made to render the results of this inquiry of real and permanent value.

IN to-day's issue of THE LANCET we present to our readers the second and concluding portion of Sir CHARLES CAMERON'S Address in Public Medicine, delivered at the recent meeting of the British Medical Association. From his position and experience as medical officer of health and public analyst for practically a score of years to the city of Dublin, his audience were naturally led to expect from Sir CHARLES CAMERON an authoritative and critical account of the progress of public medicine in the sister isle, as well as an able *résumé* of the more important discoveries in sanitary science which have been made during the last few years. The fact that the address has been printed *in extenso* in these columns may be taken as an indication that these expectations have been realised.

Dublin has for some time past enjoyed the unenviable notoriety of being the city in which the ravages of enteric fever have been far heavier than in any other city of the United Kingdom, and, accordingly, we are by no means surprised to find that a large portion of the address has been devoted to a consideration of the etiology of this eminently preventable disease, as well as of the measures which recent experience has shown to be effectual for its prevention. He states that although typhoid fever is undoubtedly sometimes conveyed from the sick to the healthy by means of contaminated water, milk, &c., nevertheless, in his own experience and in that of other reliable authorities quoted by him, the spread of the disease is more frequently due to a polluted condition of the subsoil; and he explains that dry particles of specifically contaminated soils may readily be blown about as dust, and may thus find their way into milk and drinking water, and be ingested with the food; they may even be inhaled in poisonous quantities with the respired air. He believes that typhoid fever is a true miasmatic disease, and that it becomes epidemic in certain localities where the soil conditions are favourable to the development of the micro-organisms which cause the disease. That the typhoid bacillus can exist apart from the human organism is shown by the facility with which this deadly parasite may be cultivated for long periods in suitable media. From the well-known fact that it can live and multiply in broth and potatoes he concludes that it can, for a season at least, exist and thrive in soils containing organic matter. As regards the kind of soil which is most conducive to the propagation of the typhoid bacillus, Sir CHARLES CAMERON finds that the sandy or gravelly soils are by far the most favourable in this respect; and he gives a table (p. 372) to show that in those parts of Dublin which lie upon gravelly soil 1 in every 58 of the population have in recent years been infected with typhoid fever; whereas, in the parts resting on a clayey subsoil the proportion did not exceed 1 in 78. It has been suggested that the waterlogged condition of Dublin is the cause of the prevalence of typhoid fever there, the remedy for which condition would of course be the drainage of the subsoil. Sir CHARLES CAMERON, however, finds as a fact that the low-lying portion of Dublin, where there is most typhoid fever, is not damp, that the ground water there lies low, and that, contrary to ordinary experience, in those parts where the ground water comes much nearer the surface there is least typhoid fever.

Referring to the relation of polluted water to the prevalence of typhoid fever, Sir CHARLES CAMERON draws a striking comparison between the Irish and the English metropolis, which seems to indicate that the disease is not always due to this cause. In Dublin the Vartry water, which is supplied continuously and without the intervention of the objectionable cistern, is of a high degree of purity, and is collected in a mountainous region twenty-three miles from the city. London, on the contrary, derives its water from rivers into which the sewage of a vast population is discharged, sometimes with but a trifling attempt at purification, and the water is generally stored in exposed cisterns. Yet the typhoid fever rate in Dublin is more than three times that of

[1] THE LANCET, vol. i. 1834-35, p. 432.
[2] THE LANCET, June 17th, 1865.

London. Upon this point we may remark parenthetically that, although there is no ground for suggesting that the Dublin water-supply is habitually contaminated, nevertheless we remember at least one recent occasion in which a somewhat serious pollution of that supply was found to have taken place not far from the Vartry waterworks.

One point relating to the spread of typhoid fever will, we think, be quite novel to most of our readers. Sir CHARLES CAMERON finds that since the introduction of stone pavements this disease has increased in the city. It is most prevalent amongst persons whose working hours are spent in offices and warehouses in the streets which are paved or asphalted. The bacilli of typhoid fever or their spores, which readily escape into macadamised streets, cannot, he remarks, get through the paved roadways, and are, therefore, more readily drawn into the houses through the floors, which are rarely concreted. He confidently asserts his belief that if the city rested on a stratum of asphalt there would be little or no typhoid fever in Dublin. For obvious reasons this experiment is not likely to be tried; but we think that, even if practicable, it would be a dangerous proceeding to seal up the emanations from countless tons of decomposing filth and to retain them under pressure for an indefinite period beneath the dwelling-houses of Dublin.

THE presentation of a statue of SYDENHAM to the museum of the University of Oxford by Sir HENRY ACLAND was not the least interesting or significant event in the recent eventful days in Oxford, and the University was fitly represented on this occasion by its distinguished Chancellor, Lord SALISBURY, who happens also to be the President of the British Association for the Advancement of Science, which was until Wednesday holding learned revel in the city. The statue is the gift of the Warden and two former Fellows of All Souls' College, one of whom is Sir HENRY ACLAND himself, the Regius Professor of Medicine.

The terms of Lord SALISBURY'S Presidential Address to the Association and the striking words of Dr. BILLINGS to the assembled gathering of University Extensionists, which we are fortunately able to place before our readers this week, alike show the keen interest that has lately been awakened at Oxford in our profession. It is barely a year since we had to notice the increasing interest in human anatomy shown in the provision of new and admirably arranged anatomical buildings in the University and the rapidly increasing class of students of anatomy. And the acceptation by the University of a statue to SYDENHAM, to be placed on the corbel between the names of HARVEY and JOHN HUNTER, forms an aptly pictorial coping to these solid structures of progress. The occasion was one on which the Regius Professor could not but be eloquent. He has had a long and arduous task before him, in times when other subjects have swayed the University to obtain a place for medicine and for the great sciences on which it is based; but success is in sight now, and there is every prospect that, as at Cambridge, so at Oxford, the deep lessons of chemistry, physics, and biology will be taught as they should be taught. It cannot be doubted, if the Universities are true to their highest functions, that they will have in the future much more to do in the training of the medical profession than they have had in the past, and that medical men so trained will help powerfully to uphold the true spirit in which medical science and art should be cultivated. The case of SYDENHAM is a striking instance of the advantages of university training and association to medical men, for who can doubt that his intercourse with such men as BOYLE and LOCKE not only gave encouragement to a vigorous common sense and to a strong bent for observation, but compelled him from the outset to found his treatment critically upon what would bear criticism? And as of SYDENHAM so of many other great leaders in our profession it has been true that they have lived in near communion with the potential men of their time. The presentation of this statue and Sir HENRY ACLAND'S address will serve to stimulate in the University the "medical mind" and to give encouragement to the distinguished band of teachers who now constitute the medical school of Oxford. That the clinical elements in medical education must be sought elsewhere is obvious, and was indeed pointed out by the Regius Professor; but that does not in the least affect the argument for pursuing the fundamental sciences in the Universities.

Sir HENRY ACLAND was happy in recalling on this occasion to the Chancellor the great words which he lately applied to medicine, characterising it as "the most sober, the most positive, and the most absolute of all the sciences." Such words as these are as humane as they are accurate. With a Chancellor so appreciative of the achievements of medical science Oxford is not likely to lag far behind her sister University in raising the education of men destined for the medical profession. We congratulate Sir HENRY ACLAND on having such a Chancellor to receive the tribute to SYDENHAM, and on the graceful justice with which his long, untiring labours in the University of Oxford in the cause of medical science and of hygiene were recognised.

THE borderland of insanity is one of the most interesting and important regions with which our profession has to concern itself. Little eccentricities, slight oddities, peculiar habitual actions, are every now and then manifesting themselves in our patients, and it is not by any means easy to ascribe to these peculiarities their proper practical or scientific value and significance. Some will have it that such things as we have referred to indicate some departure from mental health; while others, admitting the fact, refuse to attach to it any practical importance. It is always difficult to say when the Rubicon that separates health from disease is crossed; it is peculiarly difficult in the case of the mind, and, if the scientific importance of the determination of this point is greater than the so-called practical, the latter is by no means to be neglected. In the lately published number of *Brain* Dr. HACK TUKE discusses the subject of "imperative ideas." By this term are to be understood the ideas or words which "arise with painful frequency or vividness; the thoughts which dominate the mind with morbid persistency." Probably everyone has experienced such ideas at one time or another—some, no doubt, with much

greater vividness than others. Most of us have probably experienced the sudden recollection that perhaps we have not turned the light out or locked the door, actions which have probably become so habitual that the not doing them would give rise to discomfort. Yet the idea forces itself upon us on some particular occasion that the usual routine has been departed from, and so urgent and repeated is the impression that nothing can dispel it but the fruitless journey downstairs to find that everything is as it ought to be. Such experiences, as we have said, are not uncommon; Dr. TUKE instances several of them, and he does so with the view of bringing into relief their absolute harmlessness as mental phenomena, although they may undoubtedly give rise to grave inconvenience and even danger. Besides imperative ideas, strictly so called, there are also what may be called imperative emotions or impulses, as Dr. HACK TUKE points out. Amongst these is the peculiar impulse which some people have, when on a height, to throw themselves down. This is probably one of the commonest impulses that is met with, and it always has seemed to us very strange and curious that, in spite of the very great frequency with which it is said to be experienced, it so seldom does really become imperative and lead to the tragedy which it seems to foreshadow. We are, of course, speaking of its occurrence in people apparently sane and healthy. No doubt the arches of Waterloo Bridge and the top of the Monument could tell us tales of the fascination of moving water and of the attractions of an aerial flight, but the unfortunates who have thus perished have too often had experiences which have culminated in undoubted insanity. One most troublesome instance of imperative impulse Dr. TUKE mentions—viz., that of a gentleman, the last man in the world to use profane language, who had the greatest difficulty in preventing himself from lapsing into profanity in church and sometimes while walking in the street. Such a condition must of course be very distressing, and we are glad to learn that the language which he is impelled to utter does not really become articulate, but is represented only by jerking spasmodic movements which may be described as abortive language. Surely this gentleman must be related to another who never could see a bishop without wishing—longingly wishing—to drop into what he called "cursory" language. This was probably an imperative impulse, associated, as they sometimes are, with the idea of Satanic possession. But there are other cases which approach nearer the confines of insanity, and some which cross the dividing line. The patient who is impelled to constantly wash her hands, and who dreads to touch anything for fear of giving rise to the infection or defilement of others, is certainly nearer insanity than sanity, as Dr. TUKE admits; the other, who had the imperative idea that he was pregnant, although at first he was able to laugh at it as a delusion, actually ended his life in an asylum; so that imperative ideas, harmless as they may be, and no doubt in most cases are, must be regarded as a departure from normal mental health, in however slight a degree, and as such they will have a significance to the practical physician. Dr. HACK TUKE'S paper is full of interest in regard to the origin of these ideas, and the examples which he gives of imperative ideas, impulses, or emotions are amongst the most curious of such cases that we have come across. Its perusal will afford pleasure, and its practical and scientific value will be best recognised by those who have most to do with neurotic patients.

Annotations.

"Ne quid nimis."

PUBLIC HEALTH PROBLEMS.

IN the presidential address which the Marquis of Salisbury recently delivered at Oxford before the British Association for the Advancement of Science the ex-Premier devoted his observations to a survey, not of our knowledge, but of our ignorance, and took up the unsolved riddles of science as the keynote and pivot of his very able and thought-exciting address. With a foothold on the small, bright oasis of our present position, he peered into the nebulous region beyond and around us in which certain important physical questions have yet to be explored. As it happened, the recent discovery of a new and hitherto unsuspected constituent of the atmosphere, announced by Lord Rayleigh, served to point the moral of his contention, for it aptly illustrated our ignorance of things with which we are supposed to be best acquainted. In a somewhat similar spirit Dr. Billings—who has in his time done much in the United States and this country towards the elucidation and practical advancement of matters affecting public health—in his address on Hygiene in University Education, read before the Oxford University extension classes, adverted to some old unproved problems, and suggested some fresh ones of his own, about the solution of which we are still either in a condition of utter ignorance or in a state of mental haze of transitional conjecture or provisional surmise. The wisdom of one day is proverbially the foolishness of the next, and to plant the standard of truth an inch in advance of our generation is exceedingly difficult; still, the first step towards it is to recognise our ignorance and the uncertainty of the evidence which has served to lull, if not entirely satisfy, inquirers aforetime. Many of the clearly defined dogmatic assertions encountered in text-books have been shaped on partial and incomplete knowledge and have failed to satisfy Dr. Billings. He has consequently done good service in calling attention to facts and observations opposed to several accepted theories and hypotheses, and in pointing out the inadequacy of the evidence adduced in their support to cover all the phenomena for which they have to account. The division and specialisation of labour, so characteristic of modern civilisation, necessarily leads to critical and exact methods of investigation. The influence of epidemics on the progress of nations and communities, the relation of disease to peoples and their environment, racial immunity from certain diseases, the great changes which the study of bacteriology has induced in our views in respect of the causation and pathology of certain classes of disease:—these subjects are passed by Dr. Billings in review with the aid of light reflected on them by illustrations drawn from that great mixing-ground of races, the United States, and in so doing he has managed to set forth with much interest and point the problems he has propounded for our elucidation and solution.

THE PLAGUE IN HONG-KONG.

IT will be remembered that, as the result of a special telegram received from Hong-Kong, we were the first to announce the discovery of the Plague bacillus by Professor Kitasato; last week we were able, through the kindness of Dr. J. A. Lowson, to place before the profession for the

first time in this country a series of illustrations of the special organism associated with the disease. These were the first specimens transmitted to this country and had been carefully examined before they were sent to Bristol for exhibition at the Pathological Museum of the British Medical Association. Since Professor Kitasato's observations were published they have been corroborated by Dr. Yersin, who, however, claims to have discovered *the* bacillus of the Chinese plague. We think there must be some misapprehension here, as Professor Kitasato is such an accurate and reliable observer that we cannot conceive that he has rushed into print without having first satisfied himself as to the accuracy of his observations and experiments. There can, however, be little doubt that this Chinese plague is practically identical with the plague that ravaged London before the Great Fire. In this Professor Kitasato and Dr. Yersin agree. Dr. Yersin also agrees with Professor Kitasato that the bacillus is localised specially in the bubonic swellings, the liver, and the spleen; and his description bears out what was observable in the preparations sent by Dr. Lowson, that whenever the germs are present in the blood they are few in number, and in microscopic preparations sparsely distributed, sometimes only a single organism occurring in several fields. It is interesting to note the fact that rats and mice are so susceptible to the disease, as this is a very important point in determining its identity with the "Black Death" that so frequently made its appearance in our own country, and which was described by Boccaccio as the Florentine plague. In Hong-Kong thousands of rats appeared to have succumbed to its virulence, whilst Dr. Richard Mead, in his account of the "Black Death" plague, pointed out that small birds were also specially susceptible to the disease. The history of this recent outbreak of plague in the East has still to be written, but now that its etiology is placed on a firmer basis sanitarians may expect to be able to cope with it at a much earlier period and much more thoroughly than has hitherto been the case, and for this alone the present outbreak will probably remain memorable in the history of the disease.

THE NEWTON ABBOT WORKHOUSE SCANDAL.

THE report which the Local Government Board have recently made to the Newton Abbot guardians as a result of the inquiry held by Lord Courtenay and Dr. Fuller proves, we regret to say, that the allegations made against the administration of the workhouse were in the main true. In the words of the report, "the evidence appears to the Board to leave no room for doubt that both the majority of the guardians and of their officers have failed to appreciate the serious responsibilities that rest upon them as regards the welfare of the inmates under their care." There have been, the Board consider, "cruel ill-usage in individual cases and many abuses of a serious character affecting the comfort and well-being of many of the inmates, more especially of the sick, the imbecile, and the children." The Board speak strongly as regards the apparent callousness of the late matron to the abuses which were brought to her notice, and they refuse to sanction the further continuance in office of the master, who, it will be remembered, was recently reappointed by the guardians. In respect to the medical officer, who has now resigned, the Board consider that during a considerable period he had allowed his duties to be performed by his deputy, in spite of the fact that the personal performance of his duties was a requirement of his office. At the same time the Board recognise his endeavours to remedy matters in 1890. The late schoolmaster is held responsible for the dirty condition of the boys, and a particular nurse, in having resigned her position, has "thereby anticipated the requirements of the Board." It will be seen that a wholesale example has been made of the officials implicated in the inquiry, and in November next the electorate of the Newton Abbot union will have an opportunity of removing from office those of the guardians who have neglected their duties. If the electors fail to take advantage of this opportunity, it will certainly appear that they have not much concern for the manner in which their aged poor and their helpless sick and children are treated. We cannot suppose that the general inspectors of the Board, each of whom has a large district under him, can be held responsible for every scandal that occurs. As well might an inspector of the Board of Trade be blamed for a railway accident or mining explosion. It does, however, appear that in the case in question conditions obtained in the workhouse which should have attracted the notice of the inspector and been put an end to; such, for instance, as the generally dirty condition of the workhouse and of the nurseries, and the neglected and badly clothed state of the children, as also the absence of sufficient bathing provision and washing utensils. We can well understand how the cruelty referred to escaped the notice of the inspector, as the inmates have probably far too much dread of the officials immediately over them to risk having their unhappy lives made more miserable by further ill-treatment. Indeed, the only way to to detect abuses such as these would appear to be surprise visits of the guardians by night as well as by day. Lady guardians should, we think, undertake the visiting of the women's and children's wards. If it is expected that the general inspectors are to exercise a more detailed supervision than that just referred to, obviously their number must be largely increased, and men especially fitted for the increased inspectorial duties must be selected. The type of men best suited to the work would, in our opinion, be those trained in scientific methods of thought, possessing medical knowledge, and specially versed in public health matters. Considering the numerous questions in a workhouse calling for a knowledge of nursing, dietaries, infectious diseases, drainage, ventilation, &c., it at once becomes apparent that men possessing the qualities indicated above would be those fitted in a peculiar degree to deal with them.

A STEP FORWARD.

THE publication of a new scientific discovery is frequently reserved for the meeting of the British Association, over whose deliberations it sheds an additional lustre. This year is no exception to the rule, for Lord Rayleigh, Secretary of the Royal Society, has set the whole scientific world on the *qui vive* by his welcome intelligence of the separation of a new gas, probably elementary, from the nitrogen of the air. For a long while a mysterious discrepancy has appeared in the atomic weight of the element nitrogen. When obtained from the air nitrogen had a density some ½ per cent. higher than the nitrogen obtained from other sources, such as the nitrates. All sorts of explanations were put forward to account for this difference, but at last the true solution of the problem is presented to us; another gas, whose presence was unsuspected, was found mixed with the nitrogen of the air. The gas—whether elementary or not still remains to be determined—is exceedingly inert, resembling nitrogen itself in that respect, and Professor Ramsay, F.R.S., who shares the honour of the discovery with Lord Rayleigh, has not yet succeeded in finding any chemical reaction peculiar to the new substance. If sparks from a Rhumkorff induction coil are passed through a vessel full of air, and the oxides of nitrogen formed by the discharge are absorbed in caustic potash, a residue is left that is neither oxygen nor nitrogen. This answers to no chemical test, but possesses a very distinctive spectrum consisting of a single blue line, much more intense than the line of the same wave-length in

the nitrogen spectrum. The gas can also be prepared by exposing nitrogen obtained from air to the action of magnesium. The nitrogen is absorbed by the metal, and the density of the gas rises from 14 to nearly 20. It is present in air to the extent of only 1 per cent., and only a small quantity—about 100 cubic centimetres—has been secured up to the present. There is room, according to Mendeléeff's table, for three elements between the atomic weights of 19 and 23—i.e., between fluorine and sodium—and this may prove to be one of them. The vacancies all occur in the eighth group, in which iron, nickel, cobalt, and the rare metals of the platinum group find a place. It is curious to note how often what was regarded at first merely as an exasperating discrepancy has turned out to be a sign-post on the high road to fresh discoveries. As Professor Crookes has pointed out, the investigator is amply satisfied when his figures add up to 99·99 per cent. or even less. He puts the difference down to "loss" or "errors of analysis," or in default of that coins some term, such as "catalysis," warranted to explain everything. All the while the high road to a great discovery is open, and fame and honour are holding out their arms to welcome him if he would but see. Another consideration occurs to us. Is it not possible, having regard to the great extent of our atmosphere, that more than one new element may be contained in it? We find a parallel case among the scarcer elements comprising the solid portion of the globe. Many rare elements, such as yttrium, although hardly ever found in mass, are almost universally distributed among the more abundant rocks. Supposing that an element occurred to the extent of only a hundredth of 1 per cent. in the atmosphere, there would be a considerable quantity of it in an envelope of air five miles thick and in a diameter of over 8000 miles. We may, indeed, be inhaling many rare elements at every breath without knowing it.

DEATH-RATES OF HEALTH RESORTS.

THE alleged death-rates, on the strength of which the various health or holiday resorts appeal for public patronage, while they merely provoke a smile among statistical experts or cynics and probably do not affect the prosperity of those towns whose reputation is established, do undoubtedly influence the choice of many persons as to which of the numerous seaside places springing up all along our coasts they shall try each year. The difficulties in determining the population and consequently the death-rates are great, but the method usually followed is calculated to exclude all errors on one side and to magnify those on the other. In the first place, all deaths of visitors are omitted, though no attempt is made to deduct the number of those who may have been in the place at the date of the census. Then the deaths of residents that have occurred in hospitals, workhouses, and asylums, which in the smaller towns are certain to be outside the district, are ignored, and in one case some thousands, supposed to represent the average of summer visitors, were added to the census population. It may seem scarcely fair to be compelled to include not only the deaths of absent residents but of temporary visitors, but after all it is less so than would appear at first sight, for the census population, taken as it is in the spring, includes that class of visitors, persons suffering from pulmonary affections, who are said to come only to die, although the majority return home alive. Then deaths from diphtheria ought on no account to be excluded, since from the shortness of the incubation period the disease has in all probability originated in the place; while the long incubation and gradual onset of enteric fever enable persons who have contracted it in the town to leave a place the "air of which does not agree with them." Again, the population of rapidly growing resorts is largely constituted of persons in the age periods of lowest mortality; and of domestic servants, who practically never die, since if ill they go elsewhere, their places being taken by healthier girls. They in fact are visitors who swell the number of the living, but very rarely die in the place, and constitute a source of error that no age correction can neutralise. Accurate estimates, always difficult, are here unattainable, and every form of manipulation is justly viewed with suspicion. The most honest and fairest course would be for the medical officers of health, acting together, to take the census populations corrected for age and sex as the basis of their calculations, and to give the total death-rate, including both residents dying in hospitals or workhouses and visitors, noting the actual number of the latter, and then to compare the result with the rates of other health resorts calculated in like manner, not with those of the thirty-three great towns or with that of the whole kingdom. The Registrar-General, in Table VIII. of the quarterly return just issued, has provided the raw material in the enumerated census population, the actual number of births and deaths, and of deaths from the chief zymotic diseases in each of sixty-nine seaside and nine inland health resorts; but each medical officer should from the complete census work out and apply the factor for correction of his death-rate, and note also the deaths of inhabitants occurring in hospitals &c., with such further adjustments as are really necessitated in some cases by the anomalies of local government and registration districts.

ALABASTER v. HARNESS.

MR. JUSTICE HAWKINS, on Friday, Aug. 10th, delivered a lengthy judgment in the maintenance action brought by the proprietors of the *Electrical Review* against the Medical Battery Company (Limited) and its managing director, Cornelius Bennett Harness, in respect of an action in which Dr. Tibbits sued the proprietors of the *Electrical Review* for libel. The learned judge prefaced his argument with an account of the litigation leading up to the present action. In January, 1892, a disparaging article appeared in the *Electrical Review* respecting certain apparatus advertised for sale by the Medical Battery Company. Other articles appeared in the plaintiffs' paper, and the defendant company brought an action against them in consequence. No notice of trial was given, and in April, 1893, the action was discontinued. In an article which appeared in the *Electrical Review* during the month of September, 1892, serious reflections were cast upon Dr. Tibbits, the Company, and Mr. Harness, and in so far as it reflected upon the conduct and character of Dr. Tibbits that gentleman brought a libel action against the proprietors of the *Electrical Review*. The trial resulted in a verdict for the defendants, with costs, and the present action was brought to recover those costs upon the ground that Dr. Tibbits was unlawfully maintained by the present defendants. It was submitted that Mr. Harness had a common interest with Dr. Tibbits in bringing the action, and the question which his lordship had to decide was whether Mr. Harness had, or honestly believed he had, reasonable grounds that he possessed such common interest. The article complained of by Dr. Tibbits contained libellous imputations against Mr. Harness and his company, and, although, said his lordship, the defendant, in the action of the Medical Battery Company against Alabaster and Others, had a full opportunity of completely vindicating his own and his company's character, he abandoned the action some months before the trial of Dr. Tibbits' action, preferring to shelter himself under the wing of Dr. Tibbits. Then, again, in this action he might have made himself co-plaintiff, which would have entitled him to have cleared his character, but he did not do so. In finally pronouncing judgment Mr. Justice Hawkins said he believed the defendant merely availed himself of Dr. Tibbits' action in order to

save himself from the risk of liability for the then defendants' costs, and therefore his conduct was unlawful. He thought a verdict should be entered for the plaintiffs for the taxed costs of their defence as between party and party. He consented to a stay of execution if £500 were paid into court, or security for that amount were given. We heartily congratulate the *Electrical Review* on this result.

THE MIDWIVES' QUESTION.

DR. RENTOUL has been good enough to send us a pamphlet on what he calls "The Proposed Formation of an Inferior Order of Midwifery Practitioners: being a Reply to Dr. William Carter's Pamphlet." Our readers may remember that we noticed the latter pamphlet in an article on the general question. We are glad to see that in his pamphlet Dr. Rentoul expresses regret that the discussion of this question of midwives has become so largely one of personalities. We share the regret. He says that all along he has endeavoured to keep this grave proposal free from personalities; but in the very paragraph in which he makes this remark he says: "Some practitioners were engaged in an act of great betrayal and disloyalty to pregnant women and infants, to our profession, and to the spirit of the Medical Acts." This is not a happy way of inaugurating a new and peaceful discussion of what we consider a very grave matter, on which honourable men may fairly take different sides. He would conciliate his opponents and not weaken his case by giving them credit for simply wishing to save the lives of lying-in women from death at the hands of ignorant and often dirty midwives. We commend this pamphlet to all those who are interested in the personal aspects of the controversy. It should be read in connexion with the whole evidence before the Select Committee and with Dr. Carter's pamphlet and Dr. Alexander's letters to the Committee and THE LANCET.

DEATHS BY MISADVENTURE.

Two unfortunate occurrences have taken place within a few days of each other in the Oldham Workhouse Hospital. The first (a case on which Dr. Thomson, coroner, held an inquest) was that of a man named Cole, aged thirty-one years, who jumped from the third storey of the building and died from his injuries three hours afterwards. His wife stated in evidence that he was taken to the workhouse by the doctor's orders, who said it was not safe for him to remain at home as he was strange in his manner, and she had been told previously to keep knives and ropes or anything by which he could injure himself out of his way. Yet in the workhouse infirmary no particular care seems to have been exercised, for the nurse stated that she had charge at night of 230 beds, including both male and female, with six inmates as pauper help. Cole came under her care on the night of the 2nd inst., and she had no particular instructions regarding his case and was not informed that Cole was suicidal in his tendencies. This poor man, during the temporary absence of the attendant from the ward, leapt through the window. A verdict of "Suicide whilst of unsound mind" was returned. The coroner commented very strongly on the inadequacy of paid supervision, and said it was impossible for one paid night nurse to overlook three blocks containing over 200 patients, and he would communicate with the guardians on the subject. With this the jury entirely concurred. Unfortunately, on Saturday last the same coroner, Dr. Thomson, had to hold an inquest at the same workhouse on the body of a woman, Ellen Radcliffe, who was accidentally poisoned on the previous Wednesday night, the same night of the day on which the man Cole had leapt through the window. The coroner stated that from the information supplied by the medical officer the deceased was in a hopeless condition from bronchitis and heart disease, but it would appear that the nurse (Wallis) had in the course of her duty to administer a dose of whisky to the patient, and she appeared unfortunately to have mistaken the bottle, and gave her a dose of solution of atropine instead. The woman died shortly afterwards. After hearing the evidence of Nurse Wallis, who was much affected, and others the coroner said it was patent that Nurse Wallis was responsible for the unfortunate error. They could only look upon it as one of those strange errors of judgment which people sometimes made, and had the nurse been under ordinary conditions he was not sure that it would not have been necessary to return a verdict of manslaughter against her, but under the circumstances he thought a verdict of death by misadventure was the correct one. He also commented on the fact of a solution of atropine being in a similar bottle to one in which whisky was placed, and also in the same cupboard. The jury eventually returned a verdict of "Death from misadventure," with a recommendation that in future poisons should not be kept in bottles similar to those containing medicines for internal administration. And they also recommended the guardians to increase the nursing staff for night work. Both of these recommendations are of the utmost importance, and the one as to the keeping of poisons has been made over and over again. The dispensers of these powerful drugs are not without blame in sending out poisons in ordinary medicine bottles. In this connexion, also, additional value is given to any simple mechanical contrivances, such as those that we notice in our columns to-day, that may tend to obviate accidents.

A QUINQUENNIAL CENSUS FOR LONDON.

ALL who are interested in the vital statistics of London will appreciate the value of the quinquennial census which is proposed to be taken within the county of London at the end of March, 1896, under the provisions of the Equalisation of Rates Bill, which was read a third time in the House of Commons on Monday last. The need for an intermediate census of a simple character between the more detailed decennial national censuses has long been acknowledged, not only by statisticians, but by all who have to construct or to take cognisance of local mortality statistics, the necessity for which, as a test of general sanitary condition, is now increasingly recognised. It is impossible to ignore the fact that a quinquennial census is still more urgently needed in many of our large provincial towns than in London; but probably before the London census of 1896 has been taken some means may be found for extending the scope of the enumeration so as to include some of the larger towns, where the rate of increase of population is not only larger but fluctuates from year to year still more widely than it does in the various parts of London. At any rate the concession of the principle that an intermediate quinquennial census shall be taken in London by the agency of the local officers of the Registrar-General and charged to the local rates is of good augury for its extension. The value of such a quinquennial census is scarcely depreciated by the fact that it was only incidentally introduced into the Equalisation of Rates Bill in order to justify the population of the London parishes being used as the basis for distributing the fund created by the new equalisation rate. The Bill proposes that with the assistance of these census returns, and also of annual returns of houses on the rate books furnished by the parochial authorities, the Registrar-General shall estimate the population of each metropolitan parish in April of each year, which estimate it is proposed to use as the basis for the distribution of the equalisation fund. It is impossible to regard this provision as satisfactory, although probably any other basis of estimate would be equally unsatisfactory. Nothing short of

an annual census, which would probably be too costly for the purpose, would secure a thoroughly satisfactory basis for the distribution of this fund. Rate-books as at present kept do not afford the means for a trustworthy return of the number of separate houses, as do the census schedules, because parts of houses are often separately rated, and because houses the rates of which are compounded for by the landlords do not always appear separately on the rate-books. Unless, therefore, the Local Government Board specially prescribes that the annual parochial return should be a return, not of ratings only, but of separate houses, it is to be feared that these returns, from which the Registrar-General will be bound to make his estimates, will yield far from satisfactory results. Rate-books must be kept on a uniform system, and the returns prepared from them in pursuance of the Equalisation of Rates Bill must be precisely uniform in character, or else the Registrar-General's estimates must inevitably lead to an inequitable distribution of the fund to be created by this Bill.

THE DIFFUSION OF SMALL-POX.

THE cases of small-pox newly arising in London last week were much less numerous than in the week preceding, being only 22, whilst no less than 10 deaths were registered from the disease, 7 belonging to the parish of Marylebone. In that parish only 12 cases had occurred in the six days ended with Friday of last week; but in the next three days a slight recrudescence took place, 18 additional cases being recorded. On the Sunday the schools, a workmen's club, and one place of worship in Portland-town remained closed on account of the small-pox, and much activity has been displayed by the parish sanitary officials in the direction of stamping out this renewed outburst. Mr. Wynter Blyth may be trusted to take all requisite steps for staying the spread of infection, and there seems to be no need for the alarm which is stated to be felt in the affected neighbourhood. Other sanitary districts in the metropolis which contributed cases last week were St. Pancras, Hampstead (to which parish 2 deaths belonged), Lambeth, and Wandsworth and Clapham; and 1 death occurred in the case of a resident in the parish of St. James's, Westminster. At the close of the week there remained in the institutions of the Metropolitan Asylums Board 191 patients under treatment, in addition to 18 in the Highgate Small-pox Hospital, making a total of 209 in all. There were a few cases in the north-western suburb of Willesden. We learn of one or two cases also at Southampton, as well as at Plymouth, where 1 death was registered. In the Midlands, Wolverhampton had 3 cases, and in Bilston there were 7 attacks in the week, in two houses, one of the patients (who were all promptly removed to hospital), an unvaccinated youth aged seventeen years, dying on Thursday. At Birmingham there was a slight increase in the new cases, which numbered 22, 1 death being recorded, and at the end of the week there were 35 patients in hospital, against 74 on the preceding Saturday. The disease has once invaded the adjacent district of the Manor of Aston. It continues prevalent at Willenhall, where in the week before over 30 cases came to light. At Salford there was but a single attack, and only 2, with 1 death, in Manchester last week, where the outbreak which a little time ago threatened to be one of some degree has been successfully cut short at its onset. At Garston, in Lancashire, the health officer has discovered a case in a house in which three brothers of the patient had reached a "peeling" stage, and were going about their duties in the belief that no harm would accrue; the consequence being that other members of their family contracted the malady, 6 cases in all having resulted. Happily there seems to be no further spread outside the household. But a curious story comes from the same place of a seaman from Glasgow having been arrested by the police, only to be found when in prison to be recovering from small-pox, and to be still in an infectious condition, he having been in the Coatbridge Hospital at Glasgow for some eight weeks. He was at once removed to hospital, and all due precautions were taken, the Glasgow authorities being meanwhile communicated with as to the truth of the man's tale. The close of the week found 9 patients in hospital at Garston, and 5 other persons under observation. From Scotland we learn of 2 cases at Greenock which were removed to hospital last Sunday. There has been a somewhat serious recrudescence of small-pox at Dublin, where 12 cases are stated to have been discovered on Thursday of last week; 7 of them were in one household and 4 in unvaccinated children. The disease seems to have first started in an unvaccinated infant, whose mother stayed with it until its death in hospital and then herself developed the disease and took it home to her daughter. It appears that three districts of the city are now infected, 4 cases being removed to hospital last Friday, and some 40 being under treatment at the close of the week. Sir Charles Cameron on hearing of the outbreak at once returned from a short visit to England, and has been busily engaged in preventive measures. The staffs of the Hardwicke, Whitworth, and Cork-street Hospitals have been recently vaccinated afresh, and the health officer is very strongly pressing the cause of vaccination and revaccination on those persons who need to be protected. As a consequence of the action of the guardians a larg number of persons are submitting themselves to the operation. Some cases which were at first supposed to be small-pox have turned out to be in reality chicken-pox. Almost all the cases of small-pox are traceable to North Dublin. As showing the complete nature of the preventive measures adopted, we may mention that, whilst many towns are satisfied with the thorough disinfection of the infected bedding, in Dublin it is burned.

GENERAL POST OFFICE DENTISTRY.

A CORRESPONDENT of the *Standard* has recently called public attention to a case where a girl in the Post-office employ underwent at one operation, and, in the writer's belief, in accordance with Post-office regulations, the extraction of fourteen teeth because one or two were unsound. His words are as follows:

"After personal inquiry I submit the following facts. A girl passes the qualifying examination for promotion in a certain post-office and is then informed by the General Post Office medical official that she must satisfy the local General Post Office dentist, who supplies sets of teeth free from the General Post Office, and no doubt at General Post Office prices, to General Post Office assistants. My lady informant went with the girl and the doctor to the dentist, who found slight unsoundness in one or two teeth, and the girl was at once informed that she must forego her promotion or allow fourteen teeth to be there and then extracted. The teeth were extracted at one sitting; this torture was enacted in the presence of a medical man, and you can fancy the condition of the victim. The reason given was, 'We cannot have girls laid up with toothache.' This is the General Post Office specific for toothache, and it is certainly unique."

This letter, though undoubtedly honestly meant, and probably due in some measure to the result of personal inquiry made by its writer, is none the less misleading. The Post-office practice with regard to the admission of candidates into the service is as follows: Provided the candidate is in sound health but has faulty teeth, which are likely to be a source of trouble or possibly to be injurious to his or her future well-being, he or she is required to see a dentist—any qualified dentist the candidate likes—and is given a copy of a form, which must be filled up to the satisfaction of the department. This form has on it the precautionary footnote that no assurance can be given that, even

after the dentist has certified as to the teeth, the report as to a candidate's health will necessarily be favourable. There is nothing unfair in this procedure, and it is clear that any operative enormities that may take place must be directly credited to the particular dentist selected and not to a callous Government department. The serious inaccuracy committed by the *Standard's* correspondent is contained in the words, "she must satisfy the local General Post Office dentist." There is no such person.

THROMBOSIS IN THE CEREBRAL SINUSES IN CHLOROSIS.

A PAPER on this subject by Kockel is abstracted in the last number of the *Neurologisches Centralblatt*. Two cases are referred to, the first being that of a girl aged nineteen who had long been chlorotic, and who three days after the onset of severe headache became unconscious and died in a few hours. At the necropsy a large plug was found in the vena magna Galeni, which extended into the left transverse sinus. The second case was that of a chlorotic girl aged seventeen, who was suddenly attacked with headache and vomiting and after two days became unconscious, dying on the third day. In this case also the necropsy revealed a large red thrombus occupying the large vein of Galen in its whole extent; there was likewise blocking of the straight sinus and of the transverse sinus. The brain substance around the ventricle was softened and altered in colour, and numerous recent small hæmorrhages were visible in it. The microscopic appearances consisted of numerous—mostly perivascular—hæmorrhages, thrombosis of vessels, and infiltration of their walls.

THE BRITISH INSTITUTE OF PREVENTIVE MEDICINE AND LOCAL REPRESENTATIVE GOVERNMENT BODIES.

A SHORT time ago we drew attention to the extraordinary division that took place on the report of the General Purposes Committee of the London County Council on a memorial urging the Council to prevent the erection of an Institute of Preventive Medicine in Chelsea or in any other place under their jurisdiction. The small majority of two, by which it was determined that the Council should take no steps in the matter, indicates that a very large number of the representatives on the London County Council have allowed their personal convictions and predilections to mislead them as to the scope of their powers and duties as representatives. The London County Council since its formation has done excellent work, though it has at times displayed a somewhat marked tendency to go a little too far afield for work whilst much remained for it to do close at hand; and in this instance it cannot but be felt that it has been tempted by a number of memorialists, many of whom have been loudest in their denunciation of the plan of work drawn up by the County Council, to take on its shoulders other burdens with which it is still less entitled to weight itself. The memorialists, going on the principle that any stick is good enough with which to beat the promoters of the British Institute of Preventive Medicine, have condescended to approach the County Council and to ask it to interest itself in a matter with which, after the report of the medical officer of health, it has evidently no concern, in the hope, we suppose, of diverting its energy and attention from such subjects as the improvement of the sanitary condition of London and the beautifying of our streets and parks. In the existing state of affairs and of the law we believe that the County Council has not the slightest power, as a representative body, to interfere in this matter at the present stage. Should the Institute prove to be a nuisance to the people in the district the Council might, on the report of their inspectors and medical officer of health, become empowered to act. The only other means of obtaining powers to interfere are, we believe, through an Act of Parliament, as Parliament is the only representative body which can give them the powers to take action in a matter of such importance. The majority of those who voted on Tuesday fortnight were wise in upholding the report of their General Purposes Committee, who, after careful consideration of the memorial, were evidently of opinion that the Council had no power to act—an opinion that will commend itself not only to those who are interested in the success of the work of the British Institute of Preventive Medicine, but to most impartial and unbiased observers.

THE TREATMENT OF DISEASE BY HERBALISTS.

THE Hanley coroner lately investigated the circumstances of the death of Emma Turvey, aged fifty-one, wife of Thomas Turvey, roadman, from cancer of the breast. The disease had lasted twelve months. No one but a herbalist attended her, and she persistently refused to allow anyone else to be called in. The herbalist did not pretend to have any legal qualification, but had "a qualification which satisfied the National Society of Medical Herbalists." He signed a death certificate. Mr. C. H. Phillips had examined the body of the deceased and found she had died from cancer. Had it been removed early, life might have been preserved. The coroner said it was much to be regretted that the husband had not called in a medical man. We think so too. All such cases should be investigated and exposed. We should know, at any rate, the number of persons that neglect the ordinary chances of life and who are supported in this neglect by those who should save them from it.

INFECTION AND ISOLATION.

THE advantages which may be expected to result from the notification of infectious diseases were well illustrated by two cases which lately came under the notice of the local authorities of Arbroath. One was that of a farmer who suffered his servant to milk cows while in contact with scarlet fever patients; the other was that of a person who exposed himself, and even attended a wedding party, while suffering from this disease. A merely nominal fine was imposed in each instance, possibly out of consideration for ignorance on the part of the offenders. The lenity of the sentences is even more evident than their conspicuous justice, though it is accompanied by the satisfactory assurance that the full penalty will in future be exacted in such cases. This is the more necessary that there is, in the brief statement of facts given above, sufficient evidence to show the dangerous unconcern with which infection is still regarded in some, and probably in many, parts of the country. Every practitioner who has had the misfortune to witness the perilous developments of scarlet fever following "taking cold" might well exclaim against the suicidal madness of the fever-stricken wedding-guest. As to the blame attaching to his conduct in boldly thrusting himself into a circle of more or less susceptible persons there can be no question. The other case above noted is also suggestive, and certainly the action taken by the sanitary officers of Arbroath cannot be said to have erred on the side of severity.

A "PECULIAR" FORM OF CRUELTY TO CHILDREN.

HOWEVER one may deplore the lack of sound judgment or of education, or both, which has provided a soil in some minds for the growth of religious infatuation, there comes a needful end even of charitable patience when its effect is shown to be the perpetuation of neglect and cruelty. We regret the familiar error of the "peculiar people." We would be the last to force their weak conscience, but we

cannot therefore ignore their parental responsibility. Their sick children, as a class, have probably neither part nor lot in their objection to medical service, yet their leave is not asked when illness lays them low. The parents' partial insight recognises no remedy but one—the anointing mentioned in a Scripture which makes no profession of authority outside the spiritual sphere, and teaches nothing detailed or absolute as to medical treatment. Naturally one may inquire why the common law which explains and regulates the liberty of subjects is more careful than they to consult their individual preferences, however injurious. We have an Act for the prevention of cruelty to children. We find, moreover, in that Act particular clauses which class neglect as cruelty, and expressly condemn such conduct as may cause unnecessary suffering or injury to health as criminal offences. Surely, then, we have in the action of "peculiar" parents an offence worthy the notice of this wholesome Act? Misguided they may be, honest in error also, but in error none the less, and in effect, if not in purpose, cruel enough. We fail to see, therefore, why neglect so mischievous as theirs is still apt to be overlooked by justice. The hardship of compelling conscience by their prosecution is more apparent than real. The rescue of suffering children is a real and clamant duty, which we maintain it is wrong to forego out of deference to any pitiful consideration for mistaken views.

THE ILKESTON MEDICAL OFFICERSHIP OF HEALTH.

THERE is great dissatisfaction in Ilkeston with the town council for having lately, by a majority of one, refused to re-elect the medical officer of health, Dr. Carroll, who has held the office for ten years, and for having elected Dr. Tobin. It is said that Dr. Carroll has discharged the duties ably and faithfully, often to his professional disadvantage, as in times of small-pox. For seven years the salary was only £30, for two years £50, for about six months it has been £75, and now it is to be raised to £100. On the face of it, and in the absence of any good reason for a change, it does seem very hard that Dr. Carroll should be dropped just as the salary becomes better. There may be some good reason for this conduct towards a good officer, but it does not appear so to a large section of the public. An indignation meeting, attended by about 1000 persons, has been held in the town for the purpose of sending a protest to the Local Government Board. Without pretending to a knowledge of the local circumstances and the merits of the candidates, we trust that the matter will be referred to that Board. If the duties of a medical officer of health are to be well performed he must have justice awarded him, and his independence must be secured.

DEATH CERTIFICATES AND UNQUALIFIED ASSISTANTS.

IT is amazing that cases still occur showing how medical men fail to perceive the importance of not signing medical certificates save only in those cases which they have actually attended to the last, and then not till they are assured of the actual death of the patient. A case has been investigated within the last few days by Dr. Thomas in which an unqualified assistant—his principal being absent on his holidays—signed the certificate of death of a widow sixty years old. The certificate had been left blank, but signed, and was intended for a child whom the principal had attended. But the child did not die. Thereupon the certificate came in conveniently for the case of the widow, who was seen twice by the unqualified assistant, the locum tenens not being at his post. She was suffering from spasms. The assistant at his second visit found her dying. He sought the advice of Dr. T. G. Hockridge of Tysoe-street, but on his arrival the patient was dead. Dr. Hockridge made a post-mortem examination and found, as he stated at the inquest, a feeble heart and an ovarian tumour weighing twenty pounds. He approved the treatment of the assistant. The friends thought that the assistant was the principal. The case is too much like scores of others which have come under the notice of the Registrar-General or the General Medical Council, or both.

THE ATTACK ON DR. JOSEPH WIGLESWORTH, MEDICAL SUPERINTENDENT OF RAINHILL ASYLUM.

As we announced last week, the attack on Dr. Wiglesworth by an insane patient of the Rainhill Asylum was of a more serious nature than was indicated by the brief press reports. The weapon was not a knife, as universally stated in the press, but, as we reported, a wall hook of the kind known to upholsterers as a "holdfast." Our Liverpool correspondent sends us the following account of Dr. Wiglesworth's condition, which, having regard to the serious injury he received, is decidedly satisfactory:—"Dr. Wiglesworth continues to make most favourable progress, and more than a week having elapsed since he received his wound it is reasonable to hope that he may now be considered out of danger. When he felt himself stabbed he at once placed his left forefinger, covered with his handkerchief, on the wound, and pressed it with all his strength. He walked a distance of 110 yards, and with his right hand unlocked his house door. On reaching his room he began to feel faint, but assistance was promptly at hand from Dr. Menzies and the other medical officers. Mr. Damer Harrisson, surgeon to the Liverpool Northern Hospital, arrived soon afterwards, and after administering an anæsthetic it was found that the wounded vessel was the left internal carotid artery, the wound being situated within a third of an inch from its entry into the skull. The common carotid was ligatured, the hæmorrhage arrested, and every precaution was adopted. Mr. Rushton Parker was called in consultation, and the patient has had every care and attention given him by Mr. Harrisson and by Dr. Menzies and the other members of the medical staff of the asylum. The 'holdfast' was burnished and double-edged, making a most formidable weapon."

FATALITIES UNDER ANÆSTHETICS.

AMONG the many fallacies which are current about chloroform is one that children possess an immunity from its lethal effects. A recent death at the Children's Hospital, Great Ormond-street, is a sad contradiction to this belief. A little patient aged only six months was taken to the hospital with a deeply seated glandular abscess in the neck, which was opened. As the wound did not drain properly a further operation was attempted, and the infant was given chloroform by the regular administrator of anæsthetics at the hospital, who stated in evidence that he had given chloroform to thousands of children. After two or three gasps the child ceased to breathe, and finally died of asphyxia. The report before us gives no particulars as to the time at which the operation was performed, the quantity of chloroform employed, or the method by which it was given. Very young and debilitated children undoubtedly require the utmost care, not only at the time of the operation, but in the preparation for it. Thus warmth, wrapping in cotton-wool to counteract the depression of circulation, and the administration of easily assimilable food not too long before the operation are points of salient importance often overlooked. The quantity of chloroform which will poison the medullary centres in a debilitated baby with a feeble circulation is very small indeed, and probably measured by drops. Another

death is reported as having occurred at a London hospital. A man aged forty-four was admitted into St. Bartholomew's Hospital to receive treatment for a wound of the leg. He had had several operations performed and took chloroform safely on these occasions, but on Aug. 3rd, while under chloroform administered by the hospital chloroformist, he succumbed. Death ensued in eight minutes after the anæsthetic was given.

CHOLERA.

THE four men reported last week as having been removed from the s.s. *Balmore* are now convalescent. Two have had occasional relapses of diarrhœa, and Dr. Klein has found positive evidence of cholera on making a bacteriological examination of the excreta of three of them. A case of suspicious diarrhœa, with vomiting and cramps in the stomach, was removed from the s.s. *Bedford*, inward bound from St. Petersburg, on the 15th inst., and will be kept under observation by Dr. Herbert Williams, the medical officer to the Port Sanitary Hospital. All necessary measures of disinfection will be carried out on the ship under the supervision of Dr. Collingridge.

A FATAL ICE-CREAM.

IT is probable that the serious and even fatal effects which from time to time have followed the consumption of cheap ices are capable of more than one explanation. In former numbers of THE LANCET (those of Sept. 1st, 1888, and Aug. 5th, 1893 more especially) we have discussed this question at some length. Occasionally it would appear that the injurious result is due rather to the physical shock induced by chill, or this combined with repletion, than to an action poisonous in the ordinary sense. The case of a child who died suddenly on Clapham-common after indulging largely in ice-creams may be thus explained. At all events, the rapidity of the fatal issue is suggestive of another cause than septic or mineral poison, and the more so that the case appears to have been an isolated one, though there can be little doubt that the ice-vendor's barrow provided refreshment for many other mouths on the same day. No doubt we shall gain some further light as to the real cause or causes at work from the coroner's report upon this case. Beyond an inspection of the methods and persons employed in the ice-cream industry—a step which we have already advocated—it is not apparent how accidents like that referred to can be prevented by any mode of regulation. The case in question, however we may explain it, should certainly constitute an effectual warning to parents that they cannot safely trust, but must control, the fancies and appetites of their children. Particularly in the circumstances of childhood, with a nervous constitution acutely sensitive to local stimuli and possibly the usual anæmic associations found in town-bred children, it is advisable that some form of warm food should precede the iced morsel. This precaution, if observed, should prove valuable as a preventive of mischievous consequences; but the importance of moderation, or, in the delicate, even of abstinence from the popular dainty, ought to form a still more essential part in every parent's creed.

DR. C. THEODORE WILLIAMS, after twenty-seven years' work on the staff of the Brompton Hospital, during twenty-three years of which he was full physician, has recently retired, and has been unanimously elected consulting physician to the institution.

WE understand that the election of the new medical staff at the Chelsea Hospital for Women took place on Wednesday last. It is probable that we shall have occasion to refer further to the matter in our next issue.

ON Wednesday last, at Oxford, the degree of D.C.L., *honoris causâ*, was conferred upon some of the prominent representatives of foreign universities present in Oxford in connexion with the meeting of the British Association for the Advancement of Science. The *savants* selected for the honour were Professor Bolzmann of Vienna, Professor Langley of Washington, and Professor Quincke of Heidelberg, all famous in the world of physics; Professor Hermann of Königsberg; Professor Engelmann of Utrecht; Professor Leffler of Stockholm; Professor Beneden of Liège, a foreign member of the Royal Society, who has devoted his life to researches in anatomy and zoology; Professor Cornu of Paris, an authority on all optical subjects and a Rumford medalist of the Royal Society; Professor Friedel of Paris, a famous experimental chemist; Dr. Förster of Berlin, and Dr. Chauveau of Paris, whose work in animal medicine is well known to all of us.

THE President (Surgeon-Major Theodore Duka) of the Tropical Section of the Eighth International Congress of Hygiene and Demography, to be held at Budapest next month, has received a telegram from Hong-Kong stating that Dr. Ayres, the principal medical officer to the Government, is sending a full report on the plague. Dr. Simpson of Calcutta, in conjunction with M. Haffkine, has written an important paper on the comma bacillus, and Miss Florence Nightingale (one of the hon. presidents of the Section) has promised to send a communication on village sanitation in India. Papers will also be contributed by Sir Joseph Fayrer, Sir William Moore, Professor Henry Cayley of Netley Hospital, Dr. Laveran of Paris, and other authorities.

THE library of the Obstetrical Society of London will be closed from Aug. 20th to Sept. 20th.

OUTBREAK OF SMALL-POX IN THE MALDON RURAL SANITARY DISTRICT.

BY JOHN C. THRESH, D.SC. LOND., M.B., CH.B. VICT.

ON June 29th the notification of a case of small-pox in the parish of Langford led to the discovery of a previous, unrecognised case which had occurred in the village about a fortnight before. This case which may be called the original one, as the infection could not be traced further backwards, presented certain points of interest. The patient was an elderly, crippled, agricultural labourer, and his illness commenced apparently with inflammation around a bunion on his right foot. There were no premonitory symptoms characteristic of small-pox. The foot assumed a gangrenous appearance, purpuric spots spread up the leg and appeared on the buttocks, back, &c., and the patient, who had first complained of feeling ill on June 13th, died on the 19th, death being attributed to purpura hæmorrhagica. He was first seen by a medical man on the 16th, when the foot was becoming discoloured. During his illness, and between his death and burial, the man was visited or seen by twenty different people, including friends and relatives, the undertaker and his assistant, and two women who laid out the body. These persons resided in several different parishes, two in the suburbs of London. Three of the nineteen visitors never entered the house, merely standing in the doorway to make inquiries. These escaped infection. Of the others who had actually been in the room with the man, three only escaped contracting the disease. One of these was the widow, an old woman, and the two others were people who had some few years previously been successfully revaccinated. Between June 25th and July 8th every one of the remaining sixteen were attacked with small-pox, two of the cases being of the hæmorrhagic variety and proving rapidly fatal. The undertaker and his assistant both contracted the disease, the former in a fatal form. Of the two women who prepared

the corpse, one was attacked, and the other, having been previously revaccinated, escaped.

As the dates upon which most of these people saw the original case were easily determined, the incubation period could be very approximately ascertained, and shows a wider variation than is usually assumed :—

Patient.	Incubation period.
A.	Not less than 6 days or more than 8.
B.	8 days exactly.
C.	Not less than 9 days or more than 15.
D.	10 days exactly.
E.	Not less than 10 days or more than 12.
F.	,, 12 ,, 13.
G.	,, 11 ,, 13.
H.	,, 19 ,, 20.
I.	,, 19 ,, 22.

Two of the above were undoubtedly taken ill within eight clear days of visiting the patient, whilst two others were not attacked until at least nineteen days after last seeing him. Ten days after their last visit both the latter appeared quite well, and I strongly recommended them to be revaccinated. One consented, and suffered only from an abortive attack; the other refused, and a fortnight later was in the hospital with semi-confluent small-pox.

The only person who has been affected by any of these patients is a nurse. She was revaccinated, but unsuccessfully, immediately on entering upon her duties. Four days later she was again vaccinated, but again ineffectually, and I assumed that she was immune. On the fifteenth day from coming in contact with the patients she was taken ill and had an exceedingly mild attack of small-pox. One of the patients infected by the original case was said to have been revaccinated seven years ago, but further inquiry elicited the fact that the revaccination was unsuccessful. His sister, who at the same time was revaccinated successfully, was one of the few persons who visited the original patient and escaped infection. It is evident, from the case of the nurse just mentioned, that there is some difficulty in revaccinating slightly susceptible persons and that unsuccessful revaccination, even if twice repeated, is no guarantee that a person is absolutely insusceptible to the poison of the actual disease.

As the last case was removed to hospital on July 10th it may fairly be concluded that the steps taken to stamp out the disease have been perfectly successful. The district is provided with no permanent hospital. Immediately upon the discovery of the outbreak I set out to ascertain if there was any available cottage or farmhouse suitable for isolation purposes, and most fortunately succeeded in finding an unoccupied house which the owner willingly granted me permission to use. Within twenty-four hours of hearing of the first case I had the house furnished and ready for the patients, and within thirty hours, by aid of an extemporised ambulance, all the known cases had been removed. Nurses and caretaker were provided, and from time to time afterwards patients were removed the instant the diagnosis of small-pox was certain, a daily visitation being made to all possibly infected persons so as to obtain the earliest information of an attack. Immediately the patients were removed the bed and bedding, clothing, &c. were sent to the temporary hospital for destruction or disinfection and the houses cleansed and disinfected. The public vaccinator and private medical practitioners helped me most willingly, and revaccination proceeded apace. To this prompt removal of patients and the revaccination must be attributed the speedy suppression of what appeared at one time likely to become an extensive outbreak. I may add that all the sufferers had been vaccinated in infancy and that all were adults, with the exception of the first case which came to my knowledge, a girl fourteen years of age.

Chelmsford.

ASPECTS OF PUBLIC HEALTH IN THE SCANDINAVIAN CAPITALS.

(BY ONE OF OUR SPECIAL COMMISSIONERS.)

III. COPENHAGEN.[1]

THE situation of Copenhagen on the island of Zealand, between the Baltic and the Cattegat, makes it one of the most important business centres in Northern Europe. About one-sixth of the whole population of Denmark is to be found concentrated in the capital. The central part of the city well illustrates the great difficulties that many continental towns have to contend with in attempting to carry out the principles of hygiene. Hemmed in on one side by fortifications, and on the other by the sea, living space has had to be obtained by increased height of the buildings, narrowing of the streets, and utilisation of the cellars as dwellings. Only since the razing of the fortifications in 1872 has the natural expansion of the city into the surrounding country been allowed to take place. About 4·5 per cent. of the population inhabit cellar dwellings, and it is to be feared that a considerable amount of overcrowding exists in the older parts of the town, as in 1885 there were at least 800 one- and two-roomed houses containing more than double the average number (4·2) of persons to a household. However, more has been done in the way of erecting working men's dwellings in Copenhagen than in any other continental capital that I know, and it is interesting to note that the lines on which they have worked here are to build these dwellings on the cottage, and not on the barrack, system. Some of these form regular little colonies, as the Classen dwellings, with their church, day home for 120 children, steam laundry, &c. Other dwellings that I visited, built by the Medical Association, consisted of picturesque rows of cottages, each containing three rooms and a small kitchen, for which a rent of about 4s. a week was paid. One can walk through street after street of artisans' cottages that have been built by a society entirely controlled and managed by working men. An interesting feature of these is that the cottage can become the absolute property (subject to certain reservations) of the member of the association who is lucky enough to make a successful draw in the lottery that occasionally takes place for them. Nearly a thousand houses have been built by this society.

MEAT INSPECTION.

The point that is, perhaps, most interesting in the sanitary administration of Copenhagen is the meat inspection, and certainly it is one about which we have almost everything yet to learn in this country. Meat inspection cannot be properly carried out except where there is a general abattoir, and only in the best manner possible when the abattoir is associated with the cattle market. These two, abattoir and cattle market, adjoin one another in Copenhagen. Slaughter of animals can take place nowhere else in the city, and here, too, it must be examined by specially trained veterinary surgeons. Carcases of animals, especially of pigs already slaughtered, may be brought from the country, but before they can come on the open market they must receive the official stamp of the inspector. The abattoir is situated close to the railway and harbour, and covers an area of five acres. Though opened in 1883, five years were allowed to elapse before the control was introduced. The market is partly covered and partly in the open. The ground everywhere is paved with granite blocks set in cement. The rooms in which the slaughtering is done vary considerably in size. Some—those first built—are on the cell system; that is, small separate rooms with accommodation for about six oxen; while the more recently built ones are large spacious halls that permit of as many as 120 animals being slaughtered at the same time. They are lofty and well lighted, the tiled or granite floor slopes to a central channel, the walls are of cement, and the pillars and beams used for suspending the carcases are of iron. A plentiful supply of water (an absolute necessity in a well-managed abattoir) is everywhere present. In none of the buildings could any unpleasant smell be detected. Before being slaughtered the oxen are first stunned with a poleaxe. One must, however, in this matter give the preference to the method of fixing a mask, with a nail in the centre of it, over the head. After slaughter all the organs must be retained until the veterinary surgeon has made his rounds. The animals are first inspected by a veterinary surgeon as they stand in the market, and any animal detected with contagious disease is marched off to a quarantine stall and slaughtered in a special room.

The inspection of the carcases differs slightly from that in vogue in Paris, Brussels, and Berlin, but will serve very well as an example of how this characteristic feature in continental hygiene is carried out. The veterinary surgeon, accompanied by the meat marker, first cuts into the glands of the neck; examines the pleura and peritoneum to see if there are any signs of inflammation, and if he finds nothing amiss, does not examine the glands further. The meat is then stamped in

[1] Parts I. and II. appeared in THE LANCET of July 14th and 21st respectively.

the case of large animals in twelve different places. Should the glands in the neck, however, be found to be enlarged or suppurating, he undertakes a thorough examination of the submaxillary, axillary, bronchial, mesenteric, inguinal, and lumbar glands, rapidly cutting into them to see their condition. The muscles at the base of the tongue are always cut into to see if cysticerci are present. The lungs, liver, kidneys, and spleen are carefully handled and incised. Tubercle when generalised is a sufficient cause for seizure, but not when localised in one or two places. In the latter case the diseased portions only are removed. When in doubt as to the dissemination of tubercle the vertebræ are sometimes sawn through the middle, and if found to be affected with it the carcase is condemned. A less minute examination is made of calves and sheep. Here the pleural and peritoneal cavities are inspected, and the lungs (not removed from the body) are incised *in situ*. The inspection is more careful when the animal has been slaughtered outside Copenhagen, and as the organs have been removed it is attended with greater difficulties. It can, of course, only be done with any degree of satisfaction after much practice and experience. Meat that is satisfactory is marked in blue. A black stamp, used liberally in the case of imported meat, is employed to mark carcases which, although not condemned absolutely, have had some exception taken to them. Such meat is regarded as of second-class quality, and is sold at a proportionate reduction.

The staff consists of a superintendent and twelve assistant veterinary surgeons. A private company converts the blood, by admixture with peat and sulphuric acid and drying in ovens, into a very valuable manure. The condemned meat is conveyed to a destructor, where, after the fat has been separated, it is destroyed. No bone-boiling or gut-scraping is done at the abattoir. Some of the sausage manufactories in the neighbourhood are visited regularly and the meat inspected by veterinary surgeons.

WATER SUPPLY.

The water-supply is derived chiefly from artesian and deep wells, and to a less extent from two small lakes, Sönder and Damhus. For nine months in the year (April to December) no exception can be taken to the supply, as then it consists almost entirely of the deep-well water, which is perfectly clear, pleasant to the taste, and practically germ-free. During the remaining three months, however, on economical grounds, and owing to the difficulties placed by the frost in the way of utilising the well water, recourse is had almost exclusively to the lake water, which is not entirely above suspicion. One of the lakes, Lake Damhus, is but three miles from Copenhagen, and the fields bordering on it are partly manured with night-soil. Extensive experimental borings have been made in the country round about, with the result that various water-bearing strata have been discovered, so that it is hoped before long the city will be able to dispense altogether with the supply from the lakes and rely entirely on the deep-well water. There is a little iron in the water (2·4 grammes per litre), and to oxidise this the channels conveying it are for some distance uncovered. When it reaches the city the water is led on to nine sand filter-beds, which have a total area of nearly three acres, and having gone through these it is pumped into the mains. Pumping is continuous day and night, the surplus going into a covered storage reservoir in the Sönder Park. All the supply pipes are of iron, and the average daily consumption is not seven gallons a head.

Careful bacteriological examinations have been made weekly for a number of years by Dr. H. A. Nielsen. The following table taken from the medical officer of health's report for 1892 gives the results of the analyses of the water before and after filtration for that year:—

	Filtered.	Unfiltered.	Supply pipes.
Less than 50 colonies per cc.	40	1	33
" " 100 " "	7	10	7
" " 500 " "	2	27	10
" " 1000 " "	—	6	—
" " 2000 " "	—	4	—
" " 5000 " "	—	1	—
Total	49	49	50

Since the waterworks have been established typhoid fever has diminished greatly, and no epidemic has ever been connected with the public water-supply.

DRAINAGE.

The sewage question is a burning one just now in Copenhagen, and is likely to remain so for some time to come. The construction of the sewers is very good. They have been laid with care after a definite system, so that their fall shall be sufficient to enable them to be self-cleansing, and they are sufficiently large to carry off the rain-water as well as that from the houses. They almost all, however, discharge into the harbour. Here the condition of things is not what it should be. Indeed sometimes, arriving by water at the landing stage, one is made painfully conscious of the most frightful stench from the mud churned up by the steamer's propeller. More than ten years ago Dr. Tryde, the present medical officer of health, pointed to the growing pollution to which the harbour was subjected, and suggested the construction of intercepting sewers. A definite scheme is now under consideration by a committee of the town council for constructing intercepting sewers on either side of the harbour, carrying the one by a syphon arrangement under this and uniting them both at a pumping station. From here the sewage would be pumped well out to sea where there could be no danger of its being carried back by currents into the harbour. When this has been done the watercloset system could with advantage be introduced into the city.

The scheme is a big one, and must take some years for its completion if adopted, and meanwhile something must be done to improve the existing tub system. At present all the evils so noticeable in Christiania are apparent, the removal of the tubs being contracted for by private companies and not being undertaken by the sanitary authority. Here, however, the companies have fallen upon evil days, since the conditions imposed on them of removing the matter by railway have increased their expenses, and they refuse any longer to undertake it at the present rate. It is to be hoped, therefore (there can be no question about its being desirable), that the sanitary authority will order the substitution of steel pails for the wooden ones, and provide that they are removed at least every ten days.

NOTIFICATION AND ISOLATION OF INFECTIOUS DISEASES.

Compulsory notification and isolation of infectious diseases are carried out as well and as carefully in Copenhagen as they are in Stockholm and in Christiania. The city is provided with two isolation hospitals. Öresunds', which abuts directly on to the harbour, may be regarded as the quarantine hospital, for the cases of cholera and small-pox, which are nearly always imported by ships, are brought here. There are about 100 beds, which number, however, can be considerably increased by the erection of temporary pavilions on the unoccupied land hard by; and, indeed, owing to the very widespread epidemic of scarlet fever at the time of my visit, much of the ground was so occupied with Döcker tents. These consist of canvas stretched on wooden frames, which can be rapidly joined together, the ground being covered with some impervious material. They are much used now in Denmark and Germany, and look very shipshape. A new cholera and small-pox barrack built here in 1892, though small, having only some sixteen beds, is very completely up to date in its arrangements.

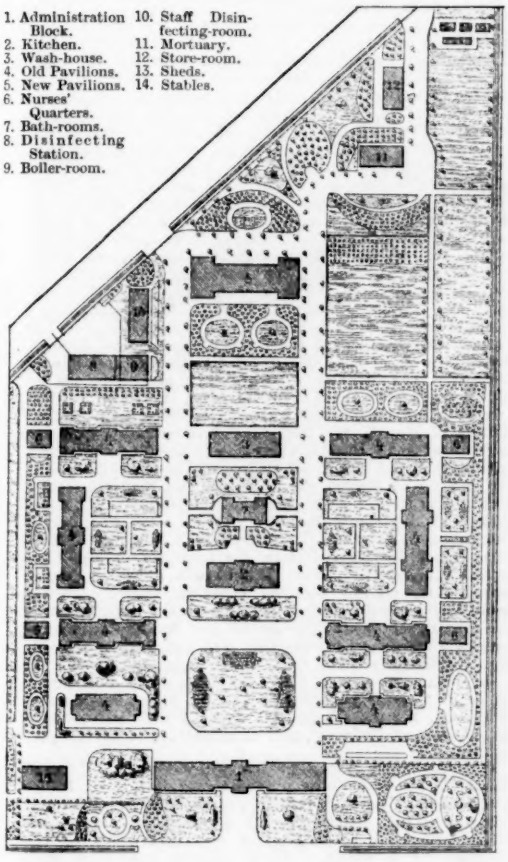
The city has reason to be proud of the Blogdam's Hospital. Built between 1876 and 1883, it was originally intended for cases of small-pox, cholera, and typhus fever, and for the other zymotic diseases only during the time of their appearance as epidemics. Gradually, however, it has become an isolation hospital in the strict sense of the term for scarlet fever and diphtheria. There are nine pavilions, eight of which are one-storeyed, and one two-storeyed, besides the administrative block, kitchen, laundry, bath-room, disinfecting station, &c. The buildings are solidly built and the arrangements as to ventilation and heating, especially in the new two-storeyed pavilion, are carefully worked out. When I visited it a good deal of the spare ground was covered by temporary Döcker tents for the accommodation of the numerous scarlet fever cases, and a considerable amount of overcrowding prevailed in the wards, some designed to hold twelve beds having nearly double this number in them. An interesting feature in the hospital is what is known as the observation ward. Here there are a number of small rooms with one, or at most two, beds in each, in which the walls are of glazed tiles, and the floor of cement, set aside for the reception of tracheotomy cases only. The separate pavilion, containing six baths, is intended, not only for the use of the discharged patients before their actual departure from the hospital, but also for persons who are notified by any medical man in the town as being, in his opinion, likely to be the better for a disinfecting bath. The disinfecting station for the city, under the control

of a foreman and seven assistants, is attached to the hospital. Here there are two Géneste and Herscher steam disinfecting machines.

A word may be said of a steam disinfector that is widely used in the smaller towns of Denmark, made by A. B. Reck of Copenhagen. No doubt the great expense of a steam disinfector hitherto in this country accounts very largely for the lamentable fact that it is the rarest thing in the world to meet with one in the rural districts. Mr. Reck is endeavouring to introduce his patent into England, and the one most commonly used in Denmark, 3×3×7 feet, can be bought for £68, boiler and fittings included. This can be seen at the works of the Blackman Ventilator Company. The principle is steam under a slight constant pressure in contact with the goods for thirty minutes. The wetting of the goods is prevented by allowing a stream of cold water to flow through the apparatus after the steam has been shut off.

PLAN OF BLOGDAM'S HOSPITAL.

1. Administration Block.
2. Kitchen.
3. Wash-house.
4. Old Pavilions.
5. New Pavilions.
6. Nurses' Quarters.
7. Bath-rooms.
8. Disinfecting Station.
9. Boiler-room.
10. Staff Disinfecting-room.
11. Mortuary.
12. Store-room.
13. Sheds.
14. Stables.



Space will not permit of further explanation, but the apparatus is so simple that it does not require any specially skilled attendance for its management.

VITAL STATISTICS, &c.

The population of Copenhagen proper at the last census, in February, 1890, was 312,859, and including the suburbs 375 251. The former number must be now nearer 350,000, and the latter over 400,000. The birth-rate in 1892 was 30·1 and the death-rate 20 per 1000. The infant mortality amounted to 187 per 1000. The death-rate from the seven principal zymotic diseases was 3·0 and that from phthisis 1·9 per 1000. Typhoid fever caused 22 deaths in the same year, corresponding to a ratio of 0·07 per 1000. No deaths were due to cholera asiatica, and only two or three suspicious cases of illness presenting symptoms resembling this disease were notified, which did not terminate fatally.

Diphtheria has shown the same tendency to increase of late years in Copenhagen that it has elsewhere. Dr. Tryde has given the attack-rate per 1000 in his 1892 report as follows:—

1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
3·5	6·3	8·3	9·8	11·2	13·9	12·6	10·9

One of the duties that takes up a good deal of the time of the district medical officers of health in Copenhagen is the supervision they have to exercise over the children that are put out to nurse by their parents. No person is allowed to receive such children without a certificate from the Health Office, which is only granted after a careful examination of the nurse's home, and may be at any time withdrawn. Pauper children are boarded out whenever possible in homes in the country, where they are well looked after and fed, the foster-parents receiving payment according to a prescribed scale.

In conclusion, reference should be made to the very valuable work prepared for the International Health Congress held in London in 1890, and published by the Danish Government, entitled "Denmark; its Medical Organisation, Hygiene, and Demography." As its name implies, this will be found a mine of information as to various public health questions in Denmark.

THE EIGHTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY AT BUDAPEST.

IT is now time that all persons intending to visit Budapest in order to be present at the Eighth International Congress of Hygiene and Demography should make their final arrangements. As this will be found not altogether an easy matter no time should be lost. At the Sixth International Congress, which was held at Vienna, there were about 1500 members attending, and 400 went on an excursion to Budapest and were magnificently received and entertained. Numbering only 400, there was no difficulty in obtaining rooms; but as on this occasion there will be not a part but the whole Congress present the hotels will be very crowded. Already Messrs. Cook and Son announce that during the Congress their ordinary coupons will not be accepted. So far the arrangements for travellers from England are anything but satisfactory. A British Committee has been appointed and it consists of a long list of highly distinguished personages. There are, for instance, Sir Douglas Galton as chairman and Professor W. H. Corfield as treasurer. Then, among the thirty-five names of the committee we noticed the names of Lord Wantage, Lord Baring, Sir Joseph Lister, Sir Henry Roscoe, Sir Joseph Fayrer, Dr. G. V. Poore, Dr. Thorne Thorne, Mr. Shirley Murphy, and others. It would be difficult to wish for a more influential list of sanitary reformers; but what is equally necessary is the presence of some active and experienced organisers of congresses. The organisation of a congress, and especially an international congress, is a technique in itself, and extremely busy and prominent members of the profession, as a rule, know nothing about it, and have not the time to acquire the necessary knowledge; nor is everyone gifted with the faculty of organisation. It is true that the greater part of the organising work has to be done at Budapest. The British Section had comparatively little to do, but it does not seem to have done even that little very satisfactorily. The first and most practical service that the British Committee had to render was to arrange how the delegates were to travel from London to Budapest, with the full benefit of the reductions the foreign railway companies were ready to grant. Such an influential committee might also, we should imagine, have obtained similar reductions from the English railway companies. In June last a circular was issued from Budapest stating that arrangements had been made with the International Sleeping Car Company for the sale of railway tickets at reduced fares to all persons who could produce their cards as members of the Congress. Then followed the list of the agencies of this company in all the principal towns of Europe. We consequently applied at Cockspur-street, and it was only at the commencement of this week that we were able to obtain an answer. It

had been necessary to send an agent to Paris to make inquiries. The answer was most unsatisfactory. Each member of the Congress must write out a description of the routes by which he intends to travel. This will be forwarded to Budapest, and in about five days' time an answer will be received as to what is the cost, and then the International Sleeping Car Company will make out the tickets. Just as if the cost for the four or five most likely routes could not have been ascertained long ago.

Instead, however, of making arrangements with the persons appointed by the Budapest committee, the British Committee have obtained particulars from Messrs. Cook and Son. The latter, however, in their printed circular do not state what reductions will be made to members of the Congress and only give the ordinary prices. Messrs. Cook and Son have organised two personally conducted tours to Budapest, but the dates of the eleven days' tour do not coincide with the Congress. This is the cheapest tour. It is set down at £21 but it is altogether inadequate. The party is to start on Aug. 29th, and, travelling straight through, *viâ* Calais, Avricourt—that is, the Orient Express route,—will reach Budapest on Friday evening before any of the business of the Congress has begun. It is only on Sunday, Sept. 2nd, at 2 P.M., that the Congress will be opened by His Imperial and Royal Highness Archduke Charles Louis. The real business of the Congress will not begin till Monday morning, Sept. 3rd, and those whose time is limited need not reach Budapest before the Monday morning, instead of, as in this instance, Friday evening. As a consequence of arriving so soon the members forming part of this tour will have to leave on the Thursday, when the Congress will be in full activity. The other personally conducted tour is more practical. Its cost is £30, it will last nineteen days, and will go *viâ* Ostend and Brussels, with several breaks on the route, and will reach Budapest also on the Friday evening, but will not leave till Monday, Sept. 10th. These tours include first-class hotel accommodation, and the latter tour is very suitable, only there should be a further reduction on the railway fare. In 1887 matters were better and more simply arranged. On presenting their members' card at any Paris railway station, persons proceeding to the Vienna Congress were allowed a return ticket for the price of the single fare. This was simple and intelligible to all. After the Congress there are to be several very attractive excursions, notably to Belgrade and Constantinople. This latter excursion from and back to Budapest will cost about £17, including travelling in the sleeping cars and first-class hotel accommodation for one day at Belgrade and five days at Constantinople. The excursion to Agram, Fiume, and Abazzia is also much to be recommended. Thence Trieste, Venice, and Northern Italy can easily be reached.

On inquiry at Messrs. Cook's office whether, since the issue of their circular relating to the Congress, any further information had been received, we found that the reduction on the railway fares was not so great as had been anticipated. Strange to say, the Austrian railways administrations have refused to make any concessions. The Hungarian railways, of course, are ready enough to grant every facility, but the journey from the Hungarian frontier to Budapest is so short that this will make a difference, in the ordinary fares, of only about 3*s*. The Italian railways, having derived considerable advantage from the International Medical Congress held at Rome, are ready to make large concessions, but this can only benefit those who start from Italy. Some English members may wish to return *viâ* Italy; they will not, however, be disposed to go so much out of their way both in their journey out and home. In all these arrangements the great difficulty rests in the utter want of discipline, of order, or cohesion of the British delegation. No one will undertake to submit himself to any sort of organisation. Everyone is waiting till the last moment before coming to any decision, and wants to arrange matters just according to his own particular fancy. Under these circumstances nothing can be done to help the delegation; they will have to pay the full tariff for their journey, with the risk of finding the trains uncomfortably crowded, and the hotels absolutely full. Messrs. Cook had retained for members of the Congress all the rooms in the Hungary Hotel at Budapest, but as no one has definitely promised to avail himself of this facility the order has been countermanded, and probably the hotel will be full before the British delegation reaches Budapest. Some sixty British members have applied to Messrs. Cook for information, but they all want to go by different routes and will not definitely pledge themselves to any one route or to any one particular day for starting. Yet if a party of twenty-five or more members would agree on a day and a route special carriages would be reserved, hotel accommodation secured, and a considerable reduction in the fares would be obtained. But this cannot be done without order and discipline, and notice must be given a week or two in advance.

To reach Budapest the Flushing, Calais, Ostend, Harwich, and Dieppe routes are all available. The Hook of Holland, Amsterdam, Hanover, and Prague, seems to be the cheapest route and doubtless the Innsbruck and Salzburg route, with splendid views of the Austrian Tyrol, will be most frequented, though it is more expensive. All intending visitors must of course send their subscriptions at once to the general secretary, Professor Coloman Müller, St. Rochus Hospital, Budapest. The subscription is ten florins, or, if we mistake not, sixteen English shillings. Lady members pay only half price, and there is a special Ladies' Reception Committee at Budapest, formed under the presidency of Mrs. Polixena Pulsky-Hampel.

As for the business of the Congress, we have already criticised its organisation. There will be nineteen sections of hygiene and seven of demography, and on June 15th last no less than 718 papers had already been announced. At that date also twenty-four different Governments, eighty-one town authorities, forty universities, and 121 societies had announced their intention to send delegates. From England the Universities of Oxford, Cambridge, and London, and from Ireland the Catholic University send representatives. Then delegates have been elected by the London School Board, the Metropolitan Asylums Board, the Royal Academy of Medicine in Ireland, the Pharmaceutical Society of Great Britain, the Pharmaceutical Society of Ireland, the Anthropological Institute, the Epidemiological Society, the Royal British Nurses' Association, the Ladies' Sanitary Association, the Sanitary Institute, the Royal Institute of British Architects, the Medical Officers of Schools' Association, Guy's Hospital and Medical School, King's College, London, the National Dental Hospital, the Royal Meteorological Society, the Society of Medical Officers of Health, the Institute of Chemistry, the Faculty of Physicians and Surgeons of Glasgow, the Institute of Civil Engineers, the Royal Institution of Great Britain, the Incorporated Society of Medical Officers of Health, the Surveyors' Institute, the Victorian Institute of Great Britain, University College, London, Firth College, Sheffield, the Royal College of Veterinary Surgeons, the Institute of Mechanical Engineers, the National Health Society, the Royal Society, Westminster Hospital, the Royal College of Physicians, Edinburgh, the Ceylon Chamber of Commerce, and the University of Edinburgh. More than eighty British delegates are members of the Congress. Undoubtedly Great Britain will be better represented than on any previous occasion, which, however, is not saying much, for in proportion to the importance of the country represented the British and the American delegations were always the feeblest of all nationalities present. More particularly were the English delegations weak in their spokesmen; and they only possessed one single orator in what is generally the official language—namely, in French. We must hope that Great Britain will make a better show at Budapest, and do something to redeem past failures.

We also hope that a motion will be brought forward for the better and more practical organisation of future congresses. We would suggest something in the following terms:—"That henceforth all International Congresses of Hygiene hold at least four plenary sittings of the Congress as a whole. These plenary assemblies shall meet in the afternoon and will be called upon to discuss not more than six practical, urgent questions and pass resolutions. If possible, reports on each of these questions, but, in any case, resolutions bearing upon them, shall be printed in French, English, and German, and put into circulation at least six weeks before the Congress meets. The expression of the opinion of the Congress as a whole, on a few well-studied and ripe questions, shall be considered the principal work of the Congress. All other questions will be discussed in the Sections, and these shall meet only in the mornings." By carrying a resolution such as the above the blunder committed in London and likely to be continued at Budapest could be blotted out, and the Congress could return to the former excellent method of organisation which rendered the Congresses of Paris, Vienna, Geneva, Hague, &c., so successful.

CHOLERA.

THE unsettled and, for the season, cool weather we are experiencing at the present time, if it be exercising an unfavourable influence on agricultural prospects, is nevertheless inimical to the progress and development of a cholera epidemic.

As regards Russia, it appears that 156 cases of cholera and 101 deaths occurred in St. Petersburg between the 5th and 11th inst. The epidemic is stated to prevail somewhat extensively in Poland. At Warsaw there were 139 cases and 75 deaths between the 29th ult. and the 4th inst.; and during the same period 125 cases and 72 deaths occurred in the government of Petrikau, and 321 cases with 104 deaths in that of St. Petersburg. In the government of Rodom, 575 cases and 283 deaths took place between the 22nd and 28th ult. The rumour that the disease had broken out at Nijni-Novgorod fair is officially denied. As the fair was even more numerously attended than last year it is satisfactory to learn that no cases of cholera occurred there or in the town itself and its vicinity. According to the last accounts from St. Petersburg there are from 10 to 12 deaths daily from cholera in that city.

From Berlin we learn that, in consequence of the increased prevalence of cholera at Dobrzyn, in Prussia, the entrance of persons from that country at the border station of Gollub has been forbidden. The *Norddeutsche*, in order to avoid all unnecessary interference and interruption of traffic, proposes to exclude cases of only a suspicious nature from publication. Late news, however, from East Prussia, and especially from Johannisburg, where some 50 cases and 21 deaths have occurred from choleraic disease, has led to increased precautions being taken. In some of the fatal cases the results of bacteriological investigations were affirmative of the presence of the comma bacillus, notwithstanding that the alleged cause of the outbreak at Johannisburg was attributed to the consumption of decomposed fish. Some cases of choleraic disease have occurred at Cologne.

The epidemic seems to have secured a firm foothold in Galicia and Bukovina. A considerable number of administrative districts are affected. The disease is stated to have been introduced from Podolia in April last into the districts of Borszczow and Zaleszczyki in Eastern Galicia, and to have gradually spread thence into a number of communes in the surrounding country. Zaleszczyki is described as a hotbed of cholera, 5 per cent. of the population of the town having been attacked with that disease in the brief space of two months. In Bukovina, the neighbouring province to Galicia, cholera appears to be extending; five districts of that province are declared to be infected. The number of attacks reported in Bukovina in three days amounted to 53 and some cases had appeared in the capital Czernovitz; 31 fatal cases were returned in Galicia during the same period.

From Amsterdam we learn that a few fatal cases of cholera have been occurring there, and one recently was announced at Utrecht. The disease prevails to a variable, but generally slight, extent at Maastricht, Halfweg, Haarlem, Zaandam, Alkmaar, Wormerveer, Langendyk, and Erp, and in Northern Holland. At Velsen seven cases and six deaths have been reported. A doubtful case was reported as having occurred on shipboard at Rotterdam. The Spanish authorities have imposed quarantine upon all vessels arriving from Holland.

Cholera still prevails at Liège and the villages in its vicinity. About 20 cases, many of them fatal, were recently registered as having occurred in one or two days in this district.

The foregoing report, as a whole, if read in connexion with the advancing season and the prevailing meteorological conditions, may, we think, be regarded as of satisfactory augury, notwithstanding that the epidemic is slowly advancing.

As regards this country, the infected vessel which arrived at Gravesend, after having been placed under the surveillance of the medical officer of the port sanitary authority, and every precaution adopted, was released from further official inspection, such of the sick as exhibited suspicious symptoms having, of course, been subjected to hospital observation and treatment. The cases were of mild type and are recovering.

We are glad to observe that a very necessary and proper precaution has been adopted for the compulsory notification of diarrhœa. A notice, signed by Sir John Monckton, the town clerk of the City of London, has been addressed to the masters and officers of vessels requiring that every case of diarrhœa occurring on board any vessel within the limit of the port of London be forthwith reported to the medical officer of health, port sanitary offices, Greenwich, and adding that a penalty will be enforced in case of non-compliance with the order.

THE OXFORD CHEMISTS.

PROFESSOR HAROLD B. DIXON, M.A., F.R.S., in his opening address to the Chemical Section of the British Association struck a vein of much historical interest, for to "the Oxford school of chemists," founded by Robert Boyle about the middle of the seventeenth century, we owe a debt of grateful remembrance. That debt would have been greater even than it is if Boyle and his pupils, Hooke and Mayow, had not been so far in advance of the age in which they lived. To appreciate truly the work they accomplished we must call to mind the dark mazes of alchemistic and metaphysical rubbish through which the students of chemistry then wandered. One of Boyle's first tasks was to prove the absurdity of the time-honoured *tria prima* of the alchemists—the three elements sulphur, mercury, and salt. We may say that he substituted the school of research and experiment for the cult of conjecture. He discovered and verified experimentally the law, called after his name, that the volume of a gas varies inversely as the pressure. We find several inklings of the true nature of chemical affinity in his papers, and he only just missed discovering the part played by the air in combustion. This was, however, really accomplished by Robert Hooke and John Mayow, Fellow of All Souls. Hooke, although a genius, was of a restless disposition, and it is to Mayow that the credit is due for determining experimentally the nature of air and its part in supporting combustion. Although his work seems to have ended in "smoak" as far as any lasting impression is concerned, Mayow's name deserves to be much more honoured than it usually is. He did not actually isolate the gas, but he detected the existence of oxygen in the air, and demonstrated many of its properties a whole century before Priestley. The work of Boyle and his school was looked upon with both hatred and contempt by the champions of classical studies, and their indignation was much exercised that a gentleman should engage himself in "low mechanical arts." Professor Dixon laments that although chemistry is given a place among the older studies, and although money is spent on the laboratory with a free hand, yet the old spirit of contempt for the philosophy of "stinks" has by no means died out. This somewhat lavish expenditure of money on science, not only at the universities but by nearly every county council and public body, is in itself a source of much anxiety to both Professor Dixon and Professor Rücker, M.A., F.R.S., president of the Mathematical and Physical Section. They, as well as many other leading men of science, fear that all this great and hurried expenditure will be devoted entirely to the production of what may be termed "question-in-the-slot machines." They plead earnestly that some at least of the money may be set apart for the encouragement of research and for teaching the methods of research. They urge that a scientific man should be capable of devising new processes and making new discoveries, and should not be merely a warehouse of information, most of which is packed so closely that it is difficult to come at any of it. Professor Dixon, by his discovery that the presence of moisture was necessary to the combustion of even highly inflammable bodies in oxygen—which has recently been amplified by Mr. H. Brereton Baker, by his work on rate of explosion, and other researches—has a right to be heard on such a subject, as has also Professor Rücker by his equally important researches in the domain of physics. As a practical means of attaining proper training Professor Dixon deprecates over-specialisation of the young. He desires that scholarships should be given for general proficiency at school and not for the crude knowledge of a number of scientific facts. The student would then take up at the University his special course of study, which Professor Dixon thinks should consist of three years or less devoted to the ordinary degree course and two years to research work, making a five years' curriculum, as in the medical profession. In addition to the important discovery of a new gas, alluded

to in another column, many interesting papers were read before the Chemical Section, among which was one dealing with a yellow modification of arsenic obtained by sublimation.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Gloucester Combined Sanitary District.—Dr. Francis Bond states that in some of the unions in this district vaccination is becoming a dead letter, and he remarks in reference to this fact that "the time cannot be far distant when the mass of unprotected humanity that is growing up will be so predominant that it will be like an explosive bomb, only waiting an exciting shock to produce a catastrophe"; and in respect to this question Dr. Bond renews his suggestion of last year that a leaflet setting forth the advantages of vaccination should be given to the parents at the same time that the registration notices in regard to vaccination are given to the parents. Dr. Bond does not consider that the advantages which might be derived from the notification of measles would be commensurate with the cost and trouble that such notification would entail. There seems to be but little isolation accommodation in the combined district, and Dr. Bond suggests that the provisions of the Isolation Hospitals Act, 1893, should be called into operation. As far, however, as we are aware the Gloucester County Council have not yet appointed a medical officer of health, and without the guidance of such an officer the operations of the Act are, as we have previously pointed out, considerably curtailed. The head waters of the Thames take their rise in Cirencester rural sanitary district, and Dr. Bond states that there is but one place in this district where there is any liability to sewage pollution, and that is at Siddington when the effluent of the Cirencester sewage farm passes into the River Churn.

Doncaster Combined Sanitary District.—Dr. Mitchell Wilson has issued a full report upon this district, which comprises four rural and three urban sanitary districts. It is, of course, impossible with the space at our disposal to review the several reports, but we notice in the appendix to the Doncaster rural sanitary report the fact that out of 76 cases of small-pox occurring in the district 29 were unvaccinated and 47 vaccinated. Among the unvaccinated there were 8 deaths; all the vaccinated cases recovered. The average stay of the vaccinated in hospital was 17 days, of the unvaccinated 41. Therefore, as Dr. Wilson points out, the cost of treatment per head among the unvaccinated was more than double that of the vaccinated. In the report of the Goole urban sanitary district Dr. Wilson states that, owing to the difficulty in isolating small-pox patients and to the suspicion attached to the present hospital as having acted as a centre of infection to the surrounding district, the sanitary authority passed a resolution that a separate hospital for small-pox was necessary.

Newcastle Urban Sanitary District.—In April, 1893, owing to the heavy mortality from measles, Dr. William Armstrong again brought up before the sanitary committee the subject of the notification of the disease. The committee subsequently discussed a motion for the inclusion of the disease among those notifiable, but the proposal was lost by one vote. Dr. Armstrong, in reference to the spread of small-pox, and possibly other diseases, by means of vagrants, expresses in his report a hope that the question of limiting the harm thus done may soon form the subject of a conference in London. The cholera hospital, which was got ready by the sanitary authority in August, consists of an administration department and a block of twenty beds, together with a disinfecting apparatus, an infected-refuse destructor, and a steam steriliser for the treatment of infected excreta. In addition to this, the drainage, foundation, and cement floorings were laid to enable four other ward blocks to be erected if necessary. It appears that a company of butchers have recently erected a block of slaughter-houses, but obviously, as Dr. Armstrong observes, this is not at all as satisfactory as the provision of a public abattoir under the control of the corporation. Appended to Dr. Armstrong's report is a capital chart showing the number of infectious diseases notified for each month of the eleven years during which notification has been in force in Newcastle.

Bacup Urban Sanitary District.—Dr. John Brown states in his annual report that under the Anthrax Order of 1892 a case of the disease was reported. The subject was a cow, and Dr. Brown thinks it probable from the evidence he obtained that the animal contracted the disease from the woollen waste which is used in Bacup for the purposes of litter; this substance ought not, Dr. Brown considers, to be utilised for bedding. Dr. Brown calls attention to the practice in small slaughter-houses of killing one animal in the presence of another. This is certainly undesirable from the point of view of the prevention of cruelty, and seems hardly consistent with the provisions of Section 8 of the Model By-laws in reference to slaughter-houses, that the person slaughtering shall "take such precautions as may be requisite to secure the infliction of as little pain or suffering as practicable." We are afraid, however, that the carrying out of by-laws is by no means a sequel to their adoption.

Reading Urban Sanitary District.—There were during 1893 18 cases of typhus fever in Reading. How the disease was introduced Dr. Alfred Ashby was unable to discover, but he thinks it probable that it was by means of a tramp. The cases occurred in ten separate houses, and 6 of the patients died. One of the cases was that of a nurse who contracted the disease at the isolation hospital; she fortunately recovered. The nursing of patients suffering from typhus fever is far from an enviable occupation, and if a nurse who has had the disease cannot be obtained it is desirable that quite a young attendant should be procured. Owing to the prevalence of small-pox in the district about fifty of the employés of the corporation were revaccinated, and although many of them were employed in erecting a hut near to a building where small-pox was being isolated none of them contracted the disease. This should do something, from an educational point of view, in Reading. Only a small proportion of the scarlet fever cases occurring in the district could be isolated in hospital owing to the presence of small-pox, and we notice that compensation was paid in seven instances to persons who discontinued work while cases of scarlet fever were being treated in their homes. There were 9 cases and 6 deaths from puerperal fever; and the midwives who have attended some of the cases were suspended from employment for a certain time and duly compensated. Dr. Ashby must have had an anxious time during the prevalence of typhus fever and small-pox in the district, and the more so since the isolation accommodation seems both defective and deficient. Numerous attempts have been made to obtain a site for the erection of a permanent isolation hospital, and we very much regret to have to chronicle that the committee appointed to report on the subject have resolved that "no further steps be taken at present for providing a new permanent hospital," and that the resolution was subsequently confirmed by the council. The value of the Anthrax Order of 1892 was illustrated at Reading during the year 1893, and a butcher who had helped to cut up an infected carcase and contracted anthrax from it was operated on with a successful result.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 5429 births and 3527 deaths were registered during the week ending Aug. 11th. The annual rate of mortality in these towns, which had increased in the preceding four weeks from 15·9 to 17·2 per 1000, further rose last week to 17·6. In London the rate was 17·4 per 1000, while it averaged 17·7 in the thirty-two provincial towns. The lowest rates in these towns were 9·8 in Croydon, 10·0 in Derby, 10·9 in Cardiff and in Swansea, and 11·9 in Plymouth; the highest rates were 21·8 in Manchester, 22·2 in Birkenhead and in Sunderland, 25·3 in Preston, and 29·2 in Liverpool. The 3527 deaths included 752 which were referred to the principal zymotic diseases, against 622 and 639 in the preceding two weeks; of these, 441 resulted from diarrhœa, 81 from measles, 81 from diphtheria, 67 from whooping-cough, 39 from scarlet fever, 30 from "fever" (principally enteric), and 13 from small-pox. These diseases caused the lowest death-rates in Plymouth, Oldham, and Newcastle-on-Tyne, and the highest rates in West Ham, Leicester, Sunderland, Liverpool, and Preston. The greatest mortality from measles occurred in Bradford, Bristol, and Sunderland; from scarlet fever in Burnley and Wolverhampton; from whooping-cough in Sunderland; from "fever" in Gateshead; and from diarrhœa in Birkenhead, Burnley, West Ham, Salford, Leicester, Liverpool, and Preston. The 81 deaths from diphtheria included 62 in

London, 4 in West Ham, and 2 each in Manchester, Leeds, and Sheffield. Ten fatal cases of small-pox were registered in London, and 1 each in Plymouth, Birmingham, and Manchester, but not one in any other of the thirty-three towns. There were 209 cases of small-pox under treatment in the Metropolitan Asylum Hospitals and in the Highgate Small-pox Hospital on Saturday last, the 11th inst., against 79, 207, and 215 at the end of the preceding three weeks; 28 new cases were admitted during the week, against 10, 152, and 40 in the preceding three weeks. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2193, against 2198, 2197, and 2221 on the preceding three Saturdays; 208 new cases were admitted during the week, against 241 and 259 in the preceding two weeks. The deaths referred to diseases of the respiratory organs in London, which had been 160 and 144 in the preceding two weeks, rose again to 151 last week, but were 35 below the corrected average. The causes of 62, or 1·8 per cent., of the deaths in the thirty-three towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Bristol, Salford, Bradford, and in thirteen other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Birmingham, Halifax, and Newcastle-on-Tyne.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 15·1 and 16·3 per 1000 in the preceding two weeks, declined again to 15·6 during the week ending Aug. 11th, and was 2·0 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 7·9 in Leith and 11·8 in Paisley to 20·7 in Perth and 21·7 in Greenock. The 444 deaths in these towns included 39 which were referred to diarrhœa, 10 to measles, 8 to whooping-cough, 4 to "fever," 4 to scarlet fever, 3 to diphtheria, and 1 to small-pox. In all, 69 deaths resulted from these principal zymotic diseases, against 48 and 65 in the preceding two weeks. These 69 deaths were equal to an annual rate of 2·5 per 1000, which was 1·2 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had been 24 and 20 in the preceding two weeks, rose again to 39 last week, of which 28 occurred in Glasgow. The 10 deaths referred to measles showed a slight further increase upon recent weekly numbers and included 4 in Dundee and 3 in Glasgow. The fatal cases of whooping-cough, which had been 3 and 15 in the preceding two weeks, declined to 8 last week, of which 5 occurred in Glasgow. The 4 deaths from scarlet fever slightly exceeded the numbers in recent weeks, and included 3 in Edinburgh. The 4 deaths referred to different forms of "fever" showed a decline of 3 from the number in the preceding week, and included 2 in Edinburgh. The fatal cases of diphtheria, which had been 6 and 12 in the preceding two weeks, fell to 3 last week. The deaths referred to diseases of the respiratory organs in these towns, which had been 49 and 54 in the preceding two weeks, were 56 last week, and were 25 below the number in the corresponding week of last year. The causes of 35, or nearly 8 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 22·2 and 20·0 per 1000 in the preceding two weeks, further declined to 18·5 during the week ending Aug. 11th. During the past six weeks of the current quarter the death-rate in the city has averaged 19·0 per 1000, against 16·9 in London and 15·2 in Edinburgh. The 124 deaths registered in Dublin during the week under notice showed a decline of 10 from the number in the previous week, and included 13 which were referred to the principal zymotic diseases, against 10 and 13 in the preceding two weeks; of these, 8 resulted from diarrhœa, 3 from "fever," 1 from small-pox, and 1 from whooping-cough, but not one either from measles, scarlet fever, or diphtheria. These 13 deaths were equal to an annual rate of 1·9 per 1000, the zymotic death-rate during the same period being 4·0 in London and 1·7 in Edinburgh. The fatal cases of diarrhœa, which had been 3 and 7 in the preceding two weeks, further rose to 8 last week. The deaths referred to different forms of "fever," which had been 2 and 3 in the preceding two weeks, were again 3 last week. The death from small-pox was the third fatal case of this disease recorded in the city during the past four weeks. The 124 deaths in Dublin last week included 24 of infants under one year of age, and 31 of persons aged upwards of sixty years; the deaths of infants showed a slight increase, while those of elderly persons were below those recorded in the preceding week. Seven inquest cases and 4 deaths from violence were registered; and 31, or one-fourth, of the deaths occurred in public institutions. The causes of 13, or more than 10 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

MOVEMENTS OF THE ARMY MEDICAL STAFF.

SURGEON-LIEUTENANT T. H. J. C. GOODWIN has been transferred from Sheffield to Newcastle; Surgeon-Major J. J. Lamprey, from York to Leeds; and Surgeon-Lieutenant H. E. B. Porter from Newcastle to Aldershot, for duty. Surgeon-Captain H. D. Rowan (Bradford), Surgeon-Major J. G. Crofts (Norwich), Surgeon-Major W. W. Pope (Netley), Surgeon-Captain E. A. Burnside (Fort George), and Surgeon-Captain W. H. Pinches (Chatham) have been ordered to Edinburgh to attend classes of instruction in judging meat. Surgeons-Major A. Harding (Shorncliffe) and W. G. Birrell (Madras) have exchanged. Surgeon-Captain J. B. Wilson is transferred from Belfast to Londonderry for temporary duty. Surgeon-Major R. C. K. Laffan has arrived in Dublin for duty from service under the Egyptian Government, and Surgeon-Captain H. A. Cummins is transferred from Cork to Fermoy for temporary duty.

ARMY MEDICAL STAFF.

Surgeon-Major William James Baker is placed on temporary half-pay on account of ill-health. The under-mentioned Surgeon-Captains to be Surgeon-Majors:—Sinclair Westcott; Hayward R. Whitehead, F.R.C.S. Eng.; Bruce M. Skinner; Charles R. Bartlett; John D. T. Reckitt; Thomas A. P. Marsh; Roger Kirkpatrick, M.B.; Harry S. McGill; Augustus A. Pechell, M.B.; Charles R. Tyrrell; James Hickman; Wilfred B. Thomson; Herbert E. Deane; and Sidney O. Stuart, F.R.C.S Edin. The under-mentioned Surgeons on probation to be Surgeon-Lieutenants:—Percy Evans, M.B.; Arthur Edward Milner; Claude Kyd Morgan, M.B.; John Payzant Silver, M.B.; Herbert Wynne Vaughan-Williams, M.B.; John Martin Buist, M.B.; James Walker, M.B.; Frank Dove; George St. Clair Thom, M.B.; and Stephen Westrope Sweetnam.

INDIA AND THE INDIAN MEDICAL SERVICE.

The following appointments are announced:—Surgeon-Lieutenant-Colonel S. B. Haliday to act as Civil Surgeon, Aden, in addition to his military duties. Brigade-Surgeon-Lieutenant-Colonel W. S. M. Price, A.M.S., to officiate on the Administrative Medical Staff of the Army, with the temporary rank of Surgeon-Colonel. Surgeon-Captain F. P. Maynard, Officiating Factory Superintendent, Bihar Opium Agency, to act as Civil Surgeon of Patna, in addition to his own duties, until further orders. Surgeon-Lieutenant-Colonel W. A. C. Roe, I.M.S. (Bengal), at present officiating as Sanitary Commissioner of the Punjab, is confirmed in that appointment. Surgeon-Captain R. C. Macwatt, M.B., I.M.S., is confirmed in his appointment of Superintendent of the Central Gaol, Raipur. Surgeon-Captain J. M. Cadell, whose services have been placed temporarily at the disposal of the Government of the North-West Provinces and Oudh by the Government of India, Home Department, to officiate as Civil Surgeon, 2nd class, and to be posted to the Etawah district. The services of Surgeon-Captain A. Coleman and Surgeon-Captain H. R. C. Barber, M.B., B.Ch., have been permanently placed at the disposal of the Punjab Government. The under-mentioned officers are granted leave:—Surgeon-Captain A. G. Hendley, for nine months, and Surgeon-Lieutenant P. St. C. More for one year. Surgeon-Captain C. R. Green, Officiating Civil Surgeon of Purnea, is allowed furlough for one year. Surgeon-Lieutenant-Colonel W. A. Barren, Indian Medical Service, Medical Officer, Bombay Sappers and Miners, is allowed furlough to Europe for two years.

NAVAL MEDICAL SERVICES.

Staff-Surgeons: E. H. Saunders to the *Britannia*, and

H. X. Browne to the *Raleigh*. Surgeons: J. Bagnall-Oakeley to the *Phœbe*, and J. H. Whelan to Keyham Yard.

MILITIA MEDICAL STAFF CORPS.

Arthur Reginald Chater, Gent., to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Artillery: 2nd Cinque Ports (Eastern Division, Royal Artillery): The services of Surgeon-Lieutenant C. Sanderson are dispensed with.—1st Northumberland (Western Division, Royal Artillery): Surgeon-Lieutenant J. V. W. Rutherford to be Surgeon-Captain.—2nd Glamorganshire: John Lynn Thomas, Gent., to be Surgeon-Lieutenant.—2nd East Riding of Yorkshire (Western Division, Royal Artillery): Second Lieutenant Henry Robinson, M.B., is appointed Surgeon-Lieutenant.—*Rifle:* 3rd Volunteer Battalion, the Bedfordshire Regiment: Surgeon-Captain D. Thomson, M.D., to be Surgeon-Major.—1st Volunteer Battalion, the Duke of Cornwall's Light Infantry: Surgeon-Lieutenant J. T. Thomas to be Surgeon-Captain.

THE HYGIENE OF THE SOLDIER'S FOOT.

The *Times of India* of the 27th ult. contains a sensible article on the hygiene of the soldier's foot, *apropos* of Surgeon-Captain Beevor's late lectures at the Royal United Service Institution on the same subject. In these days of modern warfare and rapid campaigns everything, it may be said, depends upon the soldier's marching powers. Practically it comes to this, that no ingenuity can get over the necessity for adapting the covering to the foot, and not the foot to the covering, as is too often the case. It is, or should be, a regimental duty to see that foot-cleanliness is maintained and that the boots served out to soldiers really fit them.

HOSPITAL RELIEF IN BOMBAY.

The growth of hospitals, dispensaries, and civil medical institutions in India during the last quarter of a century is very remarkable. In the city of Bombay there are 11 civil medical institutions, and in the Mofussil 277 civil hospitals and dispensaries. The total number of persons relieved annually at these institutions is enormous. The ratio of deaths in the hospitals of the city of Bombay during the past official year was 8·1 per cent. of the number treated; the great majority were discharged cured altogether or materially relieved. The largest number of patients treated at any Bombay hospital during the year—viz., 7156 in-door and 25,581 out-door patients—was at the Sir Jamsetjee Jejeebhoy Hospital.

THE DISTRIBUTION OF QUININE.

Our Anglo-Indian contemporary, the *Englishman*, states that a scheme for the distribution of quinine in five-grain packets is under consideration for Burma. The experiment has proved so successful in Bengal that its extension to the whole of India is only a question of time.

Correspondence.

"Audi alteram partem."

"SOME COMMON SOURCES OF ERROR IN TESTING FOR SUGAR IN URINE."

To the Editors of THE LANCET.

SIRS,—In his last letter Sir George Johnson simply reasserts what he stated in his first without touching the points that have been raised in opposition to his contention. To put the matter concisely, Sir George Johnson contends, upon the strength of his son's failure to get any cupric oxide reducing action after the removal of uric acid and kreatinine by mercuric chloride treatment, that no sugar is present in healthy urine. Mr. Allen, in a communication contained in your issue of July 28th, says that, under the circumstances in question, a small quantity of sugar has been indicated in each of the samples of urine he has examined and that "a wholly negative result was never obtained." Sir George Johnson takes no notice of this statement, and is also silent upon the positive evidence of the presence of sugar afforded by the fermentation and phenyl-hydrazine tests. To prolong the discussion with these points unrefuted cannot, I conceive, lead to any useful end.

I am, Sirs, yours faithfully,

Grosvenor-street, Aug. 15th, 1894. F. W. PAVY.

REPORT ON THE HEALTH OF LIVERPOOL, 1893.

To the Editors of THE LANCET.

SIRS,—A letter from Dr. J. S. Taylor and the editorial comments thereon in THE LANCET of Aug. 11th call for correction. On Jan. 3rd the City Council confirmed a *previous* resolution of the Health Committee, calling upon Dr. Taylor to retire at the expiration of three months. On March 22nd he presented to the Health Committee what purported to be the report of the health of Liverpool for 1893. The document was ordered to be printed *and was handed to Dr. Taylor*, with instructions and authority to have it so dealt with; I was in no way concerned, nor aware of its contents. Upon taking office in April I soon learned that, in addition to a mass of arrears of work left for me, the clerical staff had barely prepared a page of the annual report for 1893, and you are aware that the information contained in this report has, in conformity with the requirements of the Local Government Board and the Health Committee, been furnished year by year for many years upon a uniform model devised by the late Dr. Trench. Consequently, the clerks were engaged early and late working at this report under my personal superintendence for close on six weeks, in order that it should be submitted by the last day of May. The observations relating to infectious disease were contributed by Dr. Taylor. They occupy the first few pages. With the rest of the report and with the work it records Dr. Taylor had no more concern than you had, but as an act of considerable kindness I drew the title-page in such a manner that he should fully share in any points of interest or merit which the reader might find, and at the same time be absolved from all responsibility. On the other hand, I am equally irresponsible for any criticisms which his retirement may have prompted him to make. He has many strong and influential friends upon the Health Committee, but appeals to the local daily press in preference to these; but, still dissatisfied, he seeks sympathy further afield, and, the admittedly judicial LANCET, for once forgetful of impartiality, gives judgment in his favour on his *ex parte* statement in the column headed "Audi alteram partem." I beg you will kindly insert this in your valuable paper.

I am, Sirs, your obedient servant,

E. W. HOPE, M.D., D.Sc.,

Liverpool, Aug. 13th, 1894. Medical Officer of Health.

*** The facts here stated might have justified the issue of a supplemental and separate report; they do not, in our view, justify addition to, or amendment of, Dr. Stopford Taylor's report, whether by the clerical staff or anyone else. We hardly understand the statement that Dr. Taylor prefers appeal to the press rather than to the Health Committee. He states distinctly that he wrote to the chairman of that committee on the subject.—ED. L.

THE LATE LORD DENMAN.

To the Editors of THE LANCET.

SIRS,—The close of the long life of Lord Denman recalls to mind a family which possessed in former generations no little medical interest. The Denmans came from Nottinghamshire, but the surname (Dane-man?) is thought to show Danish extraction. Thomas Denman was an apothecary at Bakewell, Derbyshire, in the earlier part of last century. Of his two sons the elder continued his father's business, and later, taking a degree, became a man of some local repute. The younger son, Thomas Denman, was the famous obstetrician—physician-accoucheur to the Middlesex Hospital. His success in practice was not attained without a good many years of struggle; but when at length it came it was great. Smellie, who may be said to have first put the practice of midwifery by men upon a firm basis and whose pupil Denman was, died, I think, about 1770. William Hunter, who followed Smellie as a leader in this branch of medicine, died in 1783. Denman then held the field as the first midwifery physician in London and kept it for very

many years, never entirely giving up practice, until his death in 1815, at the age of eighty-two years, at his house in Mount-street, Grosvenor-square. Dr. Denman married an aunt of Sir Benjamin C. Brodie, and his two daughters both became the wives of distinguished physicians, the elder marrying Sir Richard Croft and the younger Dr. Matthew Baillie, being through the latter connected with the Hunters, and even with Baron and Edward Jenner. Thus the family was allied with some of the most famous medical leaders of that period. Dr. Denman's only son entered the profession of the law, and became the well-known Lord Chief Justice, and a peer.

The singular and eccentric personage who has just passed away, at the age of eighty-nine years, from the House of Lords was the eldest son amongst Chief Justice Denman's eleven children, and thus but two generations removed from the pupil of Smellie and contemporary of the Hunters. The family is a long-lived one. It is said that not one of the eleven children alluded to died before the eldest reached the age of seventy years.—I am, Sirs, yours truly,

Finsbury-square, E.C., Aug. 12th, 1894. R. HINGSTON FOX.

"A VISIT TO HAMBURG: THE CHOLERA EPIDEMIC, THE SLUMS, POVERTY, AND DISEASE."

To the Editors of THE LANCET.

SIRS,—Kindly permit me to make some replies to the above-named article in THE LANCET of July 7th, which I deem necessary owing to the fact that your journal enjoys so high a standing in the medical world. The epidemic of 1892, the ravages of which fairly prostrated the town, caused the city officials, the medical profession, and those who make a special study of hygiene to direct their attention more than ever before to the dwellings of the poor, to structure, position, and ventilation of the houses which, overcrowded, filthy, and squalid, lay far from the main streets and avenues of intercourse. It is impossible in a harbour-town, or in a manufacturing town to avoid having houses of this kind, in spite of all philanthropic endeavours and well-regulated sanitary and building laws. Hamburg is both a harbour and manufacturing town, and, in addition, the character of building reminds one here and there of a time not far in the past, when the city was a fortress with the necessary concentration of the population within a small space. Much has been done to correct these conditions; still more, we know, remains to do. To conceal the facts has never been our aim. To lay them open clearly to the just criticism of medical men is the first step for remedying them. I do not consider the photographs you reprinted as aiding these efforts.

The pictures themselves are instructive; furthermore, they are true. But by means of the subjoined quotations they acquire a significance too sensational. I need scarcely remark that the words of Senator Moenkeberg were not an answer to the supposed dicta of Professor Koch and Professor von Pettenkofer; the contrast between these reported sayings is arbitrarily chosen. These photographs were displayed for weeks in the shop windows here, and were removed at the request of the authorities. The "unfortunate" photographer has not been arrested or fined 600 marks. Your special correspondent has been wrongly informed. The pictures were reproduced in several papers, and, if I am not mistaken, I saw them also in the *Graphic* at that time.

I must say that I was greatly astonished to find them again, after so long an interval, in a scientific journal. In perusing the accompanying article I was still more astonished to find statements which are not, or not wholly, based upon facts. May I ask where your correspondent received his information to contest even the goodwill of the authorities here when he writes: "The town of Hamburg will have a hard task to accomplish in clearing away all these rookeries; but by far the worst feature is that there does not seem any genuine desire to take this grievance in hand." I am prepared by actual facts to show what has been done already, should it be required. Further, he states: "The Hamburg official medical statistics ..... prove that where good, sound, healthy houses were inhabited by dirty, careless people there were but few cases of cholera; but where clean, careful people lived in unwholesome houses there were many cases of cholera." But just the contrary has been gathered in the reliable official statistics.[1] A still more detailed report will appear soon by Professor Gaffky.

The impression upon the mind of the reader must be most ludicrous when he sees: "So narrow, indeed, are some of these courts that boys are able to climb up to the third and fourth floors by simply pressing their hands and feet against the walls of each side of the court." But in reality this is a gross and amusing exaggeration. To the same category belongs: "At Hamburg the slums abound on all sides in picturesque profusion." I fully agree that the long, dark, and narrow courts behind some of the broad streets ought to get the reform they need. One of the chief requisites of modern hygiene—an uncontaminated water-supply—has been fulfilled; but it requires by far a longer time to tear down those old rookeries than to secure pure water. In these respects Hamburg is not behind other towns. No one will doubt that each old and rich, yet rapidly growing city contains houses and streets where dirt and poverty, hunger, and wretchedness prevail in most unhygienic surroundings. I lived in London for years as a medical man and I had ample opportunity to see the life and dwellings of the poorer classes, not only at Whitechapel, but also in streets nearer the great centres of traffic and the quarters of the rich. Happy each community whose sanitary arrangements are not tested by an epidemic of a severity hitherto unknown in European towns in modern times.

I am, Sirs, yours faithfully,

F. REICHE, M.D.,
Late House Surgeon to the German Hospital, Dalston, London.

Hamburg, Aug. 6th, 1894.

*** We have referred Dr. Reiche's letter to our special correspondent, who writes:—"I regret that I had not the good fortune to meet Dr. F. Reiche when at Hamburg; I should then have found at least one person to defend the action of the authorities in respect to the housing of the poor. As it was, even the new by-law proposed, and not yet adopted, was described as altogether insufficient. I had of course no desire to merely find fault. The praise I have bestowed on the Hamburg diseased meat destructor fully proves my desire to notice all that was good; nor has the condition of Whitechapel anything to do with the subject. THE LANCET has energetically denounced unwholesome conditions prevailing in England—the underground bakeries, the sweating dens, and slums worse than those of Whitechapel &c. I am pleased to hear that I was misinformed as to the photographer, who was stated to have been fined 600 marks; but why were all the shopkeepers in Hamburg so afraid of selling me the photograph, and why did they all believe the photographer had been prosecuted? In one respect I certainly seem to have committed an error, for which I wish to express my regret. The blunder was due to an erroneous translation from the medical statistics of Hamburg, page 39. The remark, I take it, applied rather to districts as a whole than to special dwellings."—ED. L.

"THE NEW MEDICAL DEFENCE ASSOCIATION, LIMITED."

To the Editors of THE LANCET.

SIRS,—"How much money did the Council of the Medical Defence Union waste in their unsuccessful fight with Mr. Bloxam, one of their own members?"

This was a question asked by me in your columns a fortnight ago, and in the letter from Drs. Bateman and Masters which appeared in your issue of the 11th inst. no answer is given, on the ground that the question contained two assertions directly contrary to the fact. Do these gentlemen, then, contend that their litigation with Mr. Bloxam was not unsuccessful? In the Court of Appeal they acknowledged their error, accepted an injunction, and had to pay the costs of both sides. Was that a victory. In the subsequent action by Mr. Bloxam for damages the plaintiff was obliged to withdraw from the case for want of funds, and judgment went by default. Could that be described as a brilliant success for the executive of the Union? If, however, Drs. Bateman and Masters are sanguine enough to regard it as

[1] Cf. Bericht des Medicin.Inspectorats über die Medic. Statistik des Hamburg. Staats, 1892, p. 39, below.

such I will express myself differently, and ask, "How much from first to last did the Bloxam case cost the members of the Medical Defence Union?" I cannot say that I agree with the statement that the present financial state of the Union is flourishing. "Some hundreds," as the secretaries naïvely express it, does not appear a very large sum to supply the possible wants of a society which numbers over 3000 members, and which apparently considers it successful policy to spend "some hundreds" in a quarrel between two of its own members. It cannot be too widely known that the New Association is the only defence society which is forbidden by its rules to interfere in litigation between two registered medical men, and consequently the only society whose shareholders can be certain that their money will not be wasted in the encouragement of inter-professional quarrels. Drs. Bateman and Masters will observe, if they refer to my letter of July 30th, that I did *not* state that the property of the New Association amounted to double that of the two older societies taken together.

I am, Sirs, yours faithfully,
J. HENRY CHALDECOTT, Hon. Sec.

Old Kent-road, London, S.E., Aug. 14th, 1894.

"MENTAL THERAPEUTICS."

To the Editors of THE LANCET.

SIRS,—I should like to be permitted to add my humble testimony to that of Dr. Schofield's *re* "Mental Therapeutics." Unless an individual has his bump of self-esteem inordinately developed, he cannot practise long without realising that his success is sometimes attained and often augmented by accompanying his prescriptions with asseverative remarks. While the influence of the mind over the body is universally recognised, its employment as a therapeutic agent is purposely employed by but a few in the regular ranks of the profession. Dr. Gordon Sharp in his article on Therapeutic Progress in THE LANCET of June 23rd, 1894 (page 1559), says: "Much depends on the man himself, and the confidence which he can inspire into his patient." The same idea was conveyed in an annotation in THE LANCET on Sir Andrew Clark some time ago. This simply bears out the idea that suggestion, either verbal or through the personality of the physician, is frequently part or even all that is necessary to effect a cure. With your permission I will cite an instance in support of my contention.

About a year ago, while attending an Englishwoman aged forty-four, who was well advanced in convalescence from muscular rheumatism, she was suddenly attacked with asthma. She had never had it before (nor has she since). Her father had been a victim of it, and his sufferings had made a great and lasting impression upon her. One evening several loquacious old dames discussed the subject in her presence, and predicted that in her weak state she would surely develop asthma, because it ran in the family. She was terribly wrought up over it, and some hours later I was sent for, when I found her with orthopnœa, bilateral sonorous and sibilant râles, and evidently much distressed. By exclusion I was led to regard the case as neurotic, gave a placebo, and assured her that her "friends" (?) had no foundation for their remarks, and that the condition would speedily pass away, which it did, and, as I have said, without any return. Another very marked case of mine was reported by Dr. Judson Daland in the *University Medical Magazine*, April, 1893.

A few days ago I gave a patient some three-grain quinine pills. This morning he volunteered the statement that his "bowels have not moved so well since he stopped taking the pills."

Without trespassing further on your space I will only add that, after one has had his attention directed to this matter, he will find such events of almost daily occurrence.

I am, Sirs, yours faithfully,
W. E. ROBERTSON.

North Fourth-street, Philadelphia, July 29th, 1894.

"THE ADDRESS IN SURGERY AT THE BRITISH MEDICAL ASSOCIATION."

To the Editors of THE LANCET.

SIRS,—In this address, which is published in THE LANCET of Aug. 4th, the following appears: "What is a surgeon? A stranger looking at the doorplates of an English town might reasonably infer that there was no lack of material on which to base an answer; but then the stranger does not know, as we do, that the title 'Surgeon' on an Englishman's doorplate usually means that the possessor thereof is prepared to practise any and every branch of the healing art save and excepting surgery." I write to protest against the statement that the title "Surgeon" on an Englishman's doorplate usually means that the possessor thereof is prepared to practise any and every branch of the healing art save and excepting surgery, and I maintain that the great majority of general practitioners practise surgery, and, what is more, practise it successfully under circumstances often adverse and without all those appliances which are of course within the reach of the surgeon in the hospital ward. Such a statement to the lay mind gives the idea that the science and art of surgery are excluded from the general practitioner's duties, whereas a greater portion of his work is surgical, and I maintain he is prepared and able to treat such cases as come before him. I have nothing whatever to say about any other portion of the address, but the above paragraph, as I read it, appears to be altogether unnecessary and untrue.

I am, Sirs, yours faithfully,
M.R.C.S.

Aug. 11th, 1894.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Condition of the Ship Canal.

CONSIDERABLE activity is manifested at present in the promotion of traffic on the canal, and at a meeting of shareholders on the 7th inst. Mr. Jacob Bright, M.P., who presided, spoke very confidently of its future. No mention apparently was made of the foul state of the water, though even in the interests of the shareholders it is worth attention. Fortunately the summer, with the exception of a few short periods of great heat, has been cool and comparatively wet, but notwithstanding this the stench to unacclimatised noses is at times vile beyond description and almost beyond endurance. I crossed it at the Old Trafford Bridge a few weeks ago, and can bear testimony to its being a nuisance difficult to exaggerate. It is, moreover, not confined to the neighbourhood of the docks, but extends for many miles down the canal. At the last meeting of the Warrington rural sanitary authority a letter was read from Mr. Gornall, the medical officer of health, enclosing one from a gentleman living in the neighbourhood of the canal, who complained of the unbearable stench and stated that some members of his family were complaining of sickness. Mr. Gornall bears witness to its truth and says: "The stink from that portion of the canal near to the Knutsford-road during the last fortnight has been a serious nuisance and prejudicial to health." It was decided to report the matter to the Mersey and Irwell Joint Committee. This body is credited with the best intentions, but is thought by lookers-on to be too easy and lenient with those who pollute the canal. The large population on it and in its neighbourhood is injuriously affected by this horrible nuisance, and it has surely become the duty of the committee to use to the utmost the none too drastic powers of the law.

Manchester Water.

At the last meeting of the council it was stated that the Thirlmere waterworks were completed, that the water could be supplied at once if necessary, but that there was no immediate need for it, as the Longdendale reservoirs contained enough good water for eighty days' consumption. One reason for not hastening its use is that the moment it is turned on the corporation will be in "beneficial occupation" and liable to rates and taxes of from £8000 to £10,000 a year. Complaints of the condition of the water now being supplied to one district of the city were made by several members of the council. It was said to smell badly and to have a fishy taste &c. The vice-chairman of the Waterworks Committee made the curious statement that "in certain conditions of the atmosphere water always smelt a little." The fishy taste was said to be due to there being too many fish in the Gorton reservoir, but it has been shown that it is rather caused by water snails and their ova, which in the absence of fish multiply with great rapidity. Some years ago the same complaint was made of one of the other reservoirs, but the introduction of trout was followed by the

cessation of the annoyance. It is admitted that the condition of the Gorton reservoir is not satisfactory, and the chairman of the committee is reported to have said that "when the Thirlmere water was brought to the city it might be the duty of the council to close it." When closed it has been proposed to convert it into a cemetery.

Accidental Poisoning at the Oldham Workhouse.

This institution is just now unfortunate. A few days ago one of the patients committed suicide, and on Saturday an inquest was held on the body of a woman to whom a dose of atropine had been given in mistake for whisky. Several points came out in evidence showing that the administrative arrangements greatly need reform. The night nurse said that at midnight she was sent for to see the patient, who was worse. "Whisky had been prescribed for her, and it was kept in a bottle in a cupboard where there was a bottle containing atropine. The bottles were similar in shape, and witness gave her, as she thought, a teaspoonful of whisky." The mistake was not discovered till next morning, when the doctor was sent for, "but remedies were of no avail." In a letter to the coroner the medical officer to the workhouse said the nurse had been very much distressed and harassed by the suicide of one of her patients on the previous day. The nurse stated "she had not been quite herself since the suicide, and on Wednesday she felt very unwell. She had no sleep that day and had no extra assistance at night." It appears that she had charge at night of three blocks of buildings containing over 200 beds, with no help but that of some of the weakly invalids; and, as the coroner remarked, "the only surprising thing was that more accidents than they knew of had not happened." No mention is made of any resident medical officer, so it is to be presumed that there is not one. The verdict was "Death from misadventure," with recommendations as to the safe keeping of poisons and an increase in the night nursing staff.

Notification of Disease.

Last year the local board of Levenshulme—a suburb practically of Manchester—declined to adopt the Infectious Diseases' Notification Act. At its last meeting better counsels prevailed and the resolution was rescinded. One member made the sensible remark that "it was not only necessary that the board should be armed with the powers given them for the purpose of preventing the spread of infectious disease in their own immediate neighbourhood, but for the protection of adjoining districts."

Aug. 14th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Eye Hospital.

THE reputation of the Birmingham and Midland Eye Hospital brings with it heavy responsibilities and a severe strain upon the existing accommodation. For some time past the necessity of providing additional beds has been apparent to the committee. It is now proposed to extend the building and to provide room for thirty more beds. When this is completed the hospital will contain sixty-five beds, and it is hoped that this number will meet the ever-increasing requirements of the large district from which the institution is supplied with patients. Separate accommodation for children, more space for nurses and servants, and various improvements in the lavatory arrangements, with some minor details, are the objects to be attained in this desirable alteration.

Hospital Saturday Movement.

The mayor presided at the meeting at which the distribution of cheques to the various medical charities took place on the 1st inst. This year the collections from the manufactories amounted to £11,718 17*s.* 11*d.*, as compared with £11,328 15*s.* last year—an increase of £390 2*s.* 11*d.* The street collection amounted to £426 18*s.* 10*d.*, a decrease of £33 5*s.* 8*d.*, the weather being largely responsible for the diminution. The total amount collected was £12,276 0*s.* 4*d.*, making an increase of £359 5*s.* 2*d.* over the previous year. The number of workshops contributing was 1854, including 214 new establishments; the net gain was 11. The expenses this year were £492 13*s.*, giving, in spite of additional work, a decrease of £28 9*s.* 1*d.* in comparison with last year. Alderman Cook mentioned that Manchester collected £3749, Liverpool £3950, Leeds £5187, and Bradford £1980—a very favourable leading for our own town in such an important charitable work.

The Corbett Hospital.

The working men of Stourbridge and Brierley Hill, on behalf of 8000 of their number, presented a portrait of Mr. John Corbett, the founder of this hospital, to the Management Committee on the 6th inst. The portrait, painted by Mr. H. T. Wells, R.A., bears the inscription: "In recognition of his munificence to the working classes of the neighbouring district." The meeting was well attended, the presentation being made by Viscount Cobham in appropriate and eloquent terms.

Kidderminster Borough Hospital.

It is generally an unsatisfactory, and often a thankless, task to move the rescinding of a resolution; but there are occasionally circumstances which justify the effort and prove an exception to the general rule. I venture to think that the case of the Kidderminster Hospital exhibits a correct recognition of the principle that it is right to charge those who can afford to pay for their maintenance and treatment in that institution. Mr. Grosvenor, at a recent meeting, moved that the resolution passed on May 30th, that no charge be made to any Kidderminster ratepayer for maintenance and treatment in the hospital, be rescinded. At that meeting the resolution was passed by a majority of one, some members being obliged to leave before the conclusion of the meeting who would certainly have voted against it. The mayor suggested the following addition to Mr. Grosvenor's motion: "And that the Health Committee be instructed to continue to make a charge as heretofore, but in no case to compulsorily enforce the payment of such charge." After considerable discussion the voting was ten for and ten against Mr. Grosvenor's resolution, which was then carried by the casting vote of the mayor. Though the hospital exists for the good of the community, and is rightly free for the poor, it is not expected that those who can well afford it should partake of the benefits without acknowledgment.

Aug. 14th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

The Port Sanitary Authority and Cholera Precautions.

AT a meeting of the River Tyne port sanitary authority, held at the Town Hall, Newcastle, a circular was read from the Local Government Board drawing the attention of the authority to some signs of a recurrence of cholera on the Continent, and reminding the authority, and other authorities throughout the country, that the greatest vigilance should be exercised to control any cases of diarrhœa which might appear suspicious. The medical officer of health (Dr. Armstrong) stated that nearly all the ships were visited. He did not think that there were many cases of diarrhœa. It was generally recognised now that mild cases of cholera could not be very well distinguished from diarrhœa. The object of the Local Government Board was to cover such cases. The port sanitary authority were able to see to the ships better than they were able to deal with the houses in the city.

Newcastle Eye Infirmary.

At the annual meeting of the governors of this institution the report of the committee of management was submitted by the secretary for the two years ending Dec. 31st, 1893. It was estimated that the institution worked in the centre of a population of not less than 2,000,000. About 5687 new patients had received the benefits of the charity during the two years, while the attendance at the infirmary had been about 25,000. There had been a deficit both in 1892 and 1983, and the debit due to the treasurer was £233 11*s.* 3*d.*

An Opening.

A district without a medical practitioner is perhaps hard to find in these days, and yet at this moment the inhabitants of Upper Coquetdale are in that undesirable condition, for their doctor has left after having practised in the Harbottle and Alwinton neighbourhood for some years, during which his services were much appreciated by rich and poor alike, as he was always ready in all weathers to go forth at the call of duty. Now the people on this part of the Border are hoping that someone will be speedily found to fill his

place, or many of them will have twenty miles to walk to obtain advice in an emergency.

Health of Middlesbrough.

The medical officer (Dr. Malcomson) reported that 32 cases of infectious diseases were notified during July, including 9 cases of small-pox (6 of which occurred in the Ayresome Ward), 3 of scarlet fever, 9 of enteric fever, 1 of continued fever, 4 of diphtheria, and 6 of erysipelas.

Borough of West Hartlepool.

Dr. S. Gourley, medical officer of health for West Hartlepool, says that "the death-rate of 8 for the month of June is the lowest I have ever had to report for the town."

Death of Mr. G. Tweddell.

I regret to note the death (on the 4th inst.), rather suddenly, of Mr. George Tweddell, M.R.C.S., of Scarborough, at the age of eighty. Mr. Tweddell was well known in the county of Durham, having practised many years at Houghton-le-Spring. His wife predeceased him on the 18th ult., at an advanced age.

Sunderland Infirmary.

The report presented to the annual general court of the governors of the Sunderland Infirmary held on Tuesday states that a larger number of patients were treated in the institution during the past year than in any previous year, each section of the infirmary showing an increase.

Newcastle-on-Tyne, Aug. 15th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Summer Graduation Ceremony at the University of Edinburgh.

THE summer graduation ceremony in connexion with the University of Edinburgh was held in the Synod Hall, as has been the case for many years, but it may be expected that the McEwan Hall will be ready for next year's ceremony. Sixty-four gentlemen received the degree of Doctor of Medicine and 190 those of Bachelor of Medicine and Master in Surgery. The Thesis Gold Medallists were Dr. L. C. Bruce, Dr. W. M. Hutton, Dr. G. Mann, Dr. J. A. Menzies, and Dr. J. D. Stanley. The Ettles Scholarship was awarded to Mr. J. P. Stewart, M.B.; the Beaney Prize to Mr. J. P. Stewart, M.B.; the Freeland-Barbour Fellowship to Mr. R. W. Briggs, M.B.; the Stark Scholarship to Mr. R. Hutchison, M.B.; the Gunning Victoria Jubilee Prize, in Physiology to Mr. G. Mann, M.B.; in Pathology to Mr. R. C. Dun, M.B.; and in Surgery to Mr. R. J. A. Berry, M.B.; the Buchanan Scholarship to Mr. R. W. Beesley, M.B.; the James Scott Scholarship to Mr. W. A. Stephen, M.B.; and the Wightman Prize to Mr. K. W. Monsarrat, M.B. Professor T. R. Fraser delivered the customary address to the graduates. He referred to the satisfaction felt by his colleagues and the students at the honour that Her Majesty had recently conferred upon Sir Thomas Grainger Stewart, and remarked that for the first time in the history of the University three of the professors were knights. He pointed out to the students the true nature of the work in which they would be engaged, and reminded them that the cure of patients implied the care, charge, and oversight of them, as well as the more restricted sense in which it was commonly used. In the wider acceptation their mission was actually to cure everyone who was placed under their professional charge. Even when disease could not be overcome the relief and comfort of the sufferer could be contributed to. As to their relationship to their fellow practitioners there was keen competition, on the one hand, and, on the other, a public imperfectly informed, but also a profession dealing with subjects regarding which knowledge was often uncertain. Differences therefore arose, but these were no excuse for unfriendliness. Competition was no excuse for the prevailing evils of self-advertisement, to which he thought might be attributed the load of chaff which was burdening medical literature. It was in therapeutics that shallow pretensions still continued to be more boldly and skilfully advanced than in any other department. He was not sure that the profession was altogether blameless in this matter. The competition and the desire for novelties supplied temptations the effect of which might not infrequently be observed in the application of electricity, galvanism, and massage to the treatment of many diseases, and in the readiness with which any new remedy at once became fashionable. It had to be admitted that at no previous time in the history of medicine had the temptations to yield to this form of professional charlatanism been so powerful. The advance of organic chemistry had led to the production of an almost unlimited number of substances of complex constitution; and as probably no substance was incapable of producing some perturbation in the physiological conditions of the body, and thus of modifying some of the conditions of disease, it was not remarkable that enterprising commercial therapeutists should, within the last two or three years, have recommended to the notice of the profession more than a hundred new products, whose aggregate application one would fancy should already "have made nature immortal, and death play for lack of work." It was in some respects unfortunate that haste to use new remedies was one of the conspicuous characteristics of modern medicine, for it was within modern times that one of the most important and encouraging developments of medical science had taken place. He meant the recognition and application of the fact that remedies have definite localities of action. The treatment of disease by remedial substances had thus been brought into association with one of the greatest developments of pathology—namely, that all diseases were the results of changes in definite localities, which was enunciated by Morgagni in the middle of the last century. The discoveries of bacteriology had also given a remarkable impetus to practical medicine and surgery, and Morgagni's doctrine of the localisation of disease had received a confirmation which it had lacked. In this new development progress had been facilitated by the work of pharmacologists, which had indicated the methods by which the action of bacterial toxines could best be determined, and which by the previous establishment of pharmacological antagonism had suggested the reasonableness of a toxine antagonism between bacterial toxines themselves as well as between bacterial toxines and remedies in the ordinary acceptation of the term. He then referred to steps that had been taken to encourage research in the University laboratories.

International Ophthalmological Congres .

At the eighth meeting of this congress, which was opened on Tuesday, Aug. 7th, in the physiological department of the University of Edinburgh, Dr. Argyll Robertson, the President, remarked upon the appreciative interest taken by all classes of the city in things medical, and stated that this was mainly due to the close connexion which had existed between the University and the city since its foundation 300 years ago. On the motion of the President the Lord Provost was elected an honorary member of the Edinburgh Congress. A large number of papers of scientific and practical value were submitted by members from different parts of Europe and from America. In addition, a number of microscopical demonstrations were given; amongst these was one by Dr. Gustav Mann on Alteration in Cells of Visual Centre produced by Exposure of Eyes to Light. This demonstration illustrated the result of experiments upon the brain and retina of rabbits and dogs. The conclusions to which he came were that during rest the nerve cells stored up an amount of chromatic material which was used up under stimulated functional activity, and together with this chemical change there was a definite, demonstrable physiological change, consisting of enlargement of the cell and of the nucleus if the functional activity were not excessive. Dr. Landolt of Paris introduced a discussion on Strabismus. The result of his treatment of strabismus during more than twenty years went to show the superiority of the "advancement of the muscle" over its setting back; and by advancement of the muscle he explained that he meant its detachment and subsequent attachment by means of sutures. In operating for strabismus he did not consider it sufficient to put the squinting eye straight, but also to secure binocular vision. He claimed that the advancement of the muscle was capable of curing the squint in every direction, and that it never caused disfigurement. Various other speakers had not obtained equally good results from this method of operation. Mr. McHardy of London read a paper on the Artificial Maturation of Immature Cataract. He maintained that this could be done in senile cataract by a preliminary iridectomy with trituration of the lens through the cornea, and that the results were equal to those obtained where maturation had occurred spontaneously; he allowed six or

eight weeks to elapse between trituration and extraction. Dr. Lyder Dorthen of Norway showed a beautiful series of drawings and photographs illustrative of Leprous Diseases of the Eye, and stated that in the leper hospitals the eye was affected in 80 per cent. of the patients. Dr. Theobald of Baltimore advocated the use of larger probes for the Radical Cure of Strictures of the Lacrymal Duct. It was decided to hold the next Congress at Utrecht in 1900. The members of the Congress were entertained by the Lord Provost and magistrates of the city, the Royal College of Surgeons, the Royal College of Physicians, and by the President and Mrs. Argyll Robertson.

Small-pox in Edinburgh.

The epidemic of small-pox has been declining, but seeing that there were seven fresh cases last week, against one the preceding week, it must still be a cause of anxiety to the sanitary authorities.

Intimation regarding Cholera.

A circular has been issued by the town clerk to the practitioners in Edinburgh requesting them to notify all cases of British cholera and choleraic diarrhœa during the next two months.

Aug. 14th.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Small pox in Dublin.

THE outbreak of small-pox still continues, and, although the cases so far are not very numerous, yet fresh cases have for the past few days appeared, and since Saturday up to last Monday there have been twenty additional cases admitted into Cork-street Fever and Hardwicke Hospitals. The mortality so far has not been high, and nearly all the cases which have proved fatal were those of unvaccinated persons. On Monday a fatal case occurred in a vaccinated adult, a man who died in the Cork-street Fever Hospital. He had been employed by the Corporation in disinfecting some of the houses in which small-pox had broken out, and by some oversight had not been revaccinated. Since last May the fresh cases have numbered about seventy-three. Sir Charles Cameron strongly advises revaccination, and in children vaccination.

Annual Report of the Local Government Board for Ireland.

From the twenty-second annual report now issued it appears that there has been an increase of 507 in the average daily number of persons relieved in the workhouses, and a decrease of 1158 in the average daily number of persons who received out-door relief. The average daily number in the workhouses was 40,961, of those maintained in public institutions and the district school at Trim 1152, and of those on out-door relief 57,979, making a total of 100,092 which represents 2·17 per cent. of the estimated population of the country and is less than the total average daily number in the year 1892–93 by 627. By an order made by the Board last year boards of guardians are authorised to allow tobacco or snuff to inmates of the aged and infirm classes upon passing a resolution to that effect specifying the amount to be used, and many boards of guardians have adopted this arrangement. During last year the attention of boards of guardians was directed to the difference in diet which existed for healthy inmates in Irish workhouses as compared with the more liberal diet in English and Scotch workhouses, and as a result improved dietaries have been adopted in various unions. During the year ending March last the total number of deaths in the various workhouses was 9776, showing an increase of 195 as compared with the number for the preceding year. Of these, phthisis caused 1125 deaths, against 1139; lung disease 1876 deaths, against 1707; fever 296 deaths, against 307; heart disease 678 deaths, against 565; brain disease 266 deaths, against 357; and cancer 255 deaths, against 231. There were for the twelve months ended Sept. 29th last 52,050 persons admitted into the workhouses for illness, being a decrease of 551 as contrasted with the previous year; 3497 suffered from fever or other infectious disease, or an increase of 210, and the total number of persons relieved amounted to 324,388, or an increase of 3570. Vaccination was performed in 897 instances in workhouses and in 90,370 instances in dispensary districts. Of these 71,525 were infants one year old and under, 13,124 were above one year when vaccinated, and the revaccinated cases came to 5271; the total number, amounting to 90,370, shows an increase of 4170. During last year small-pox has on several occasions, and in localities widely apart, been introduced into Ireland from places in the United Kingdom, but it is satisfactory to state that the prompt and effective measures adopted by the sanitary authorities in Ireland have on every occasion been successful in arresting the spread of the disease. During the year 34 cases were under treatment by dispensary medical officers. There were 3217 cases of fever attended by medical officers of dispensaries, or an increase of 217; and 1516 cases of scarlet fever, or an increase of 306. Cholera, although it obtained a footing in England, fortunately did not extend to Ireland; however, it was of service in many localities as the dread of its approach accomplished considerable sanitary work. But in some districts much requires to be carried out in the way of efficient drainage and sewerage, the removal of nuisances, and the provision of adequate hospital accommodation and nursing arrangements. In the various dispensary districts the medical officers attended 410,292 new cases at the dispensaries and 167,113 at their own homes, vaccinated 90 370 persons, and gave certificates for 2025 dangerous lunatics. The total number of simple and epileptic lunatics in workhouses at the end of December last was 2466—the previous year it was 2138; while the total number of simple and epileptic idiots was 1716, against 2196 The medical charities' expenditure amounted to £164,569, under which are included the cost of medicines and medical appliances (£26,704), salaries of medical officers and apothecaries (£95,143), and vaccination fees and other expenses (£10,160), showing an increase of £31 as compared with the return of the previous year. The Board sanctioned loans amounting to £352,912 8*s.* 8*d.* to various towns in Ireland, principally for sewerage and water-supply, which, added to previous sums allocated, constitute a total of £2,794,751 4*s.* 8*d.* for the nineteen years ended March 31st, 1894.

Requests to Hospitals.

The Meath Hospital has received a legacy of £1000 bequeathed by Mr. Wm. McComas, J.P., and the committee have dedicated to the memory of the testator a bed in one of the wards, with a brass plate with his name inscribed on it. The City of Dublin Hospital has also received a similar amount from the same testator.

Cork Eye, Ear, and Throat Hospital.

Subscriptions have already been promised to the amount of £2600 for the purpose of building a new Ophthalmic Hospital in Cork. A bazaar will be held in aid of the same object, which will commence on Monday, Oct. 29th, and continue to the end of the week. The bazaar will be entitled "Donnybrook Fair," and it is expected to prove a great success.

House of Industry Hospitals.

The governors have appointed Dr. A. C. O'Sullivan to be pathologist and bacteriologist. Miss E. W. Dickson, F.R.C.S.I., to be gynæcologist, and Mr. R. J. Harvey to be house surgeon.

Aug. 14th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Syphilis unpreceded by Chancre.

EVERY practitioner is familiar with the fact that in a large proportion of cases of syphilis occurring in the female the primary lesion is never discovered. It appears that secondary symptoms may likewise show themselves in the male without the seat of inoculation being discovered. M. Cordier of Lyons[1] states that this occurs in about 2 per cent. of all cases, secondary manifestations being detected about fifty days after suspicious connexion, no primary sore or glandular enlargement being present. In some instances, in from eight to twenty days after infection there may be noticed in the region in which the chancre would normally exist vulgar lesions such as balanitis or herpes, which in such a case appear to be of a syphilitic nature; the practitioner should, therefore, regard with suspicion any genital herpes occurring for the first time in a person, as also of balano-posthritis observed a few days after a suspicious connexion.

[1] Société Française de Dermatologie et de Syphiligraphie; fifth session, now being held at Lyons.

The Structure of Sweat Glands.

M. Renaut of Lyons[2] announces that the myo-epithelial cells of sudoriparous glands are prolonged along the surface of the basement membrane and form thus a continuous lining which separates the epithelium from that membrane. These myo-epithelial cells are arranged spirally, and their contraction squeezes the gland as if it were a sponge. This curious mechanism has been actually seen by M. Renaut.

The Source of Insensible Perspiration.

It is commonly supposed that both sensible and insensible perspiration are yielded by the sweat glands. M. Aubert asserts[3] that the latter is due to evaporation from the skin generally, the glands not participating in the process. To prove this, he suppresses diaphoresis in a given region by the introduction of atropine by cataphoresis, when it will be seen that the insensible sweating continues in the identical region all the same.

The Treatment of Diphtheria.

Dr. Moizard[4] has employed for the last six months a method of local treatment brought to his notice by Dr. Gobeau. The liquid used is a 5 per cent. solution of corrosive sublimate in glycerine. For children below two years the strength is reduced to one in thirty or forty. The solution is in no wise caustic, a few drops on the tongue leaving only a temporary metallic taste. The fauces are first cleared with a dry tampon, then the solution is applied, and finally the surface is dried with another dry tampon. Two, or in serious cases three, applications are made during the twenty-four hours, and every four hours a thorough douching of the throat is practised with solutions of boric acid (4 per cent.), lime water, or even simple boiled water. Under this treatment the false membranes are said to undergo rapid modifications. In ordinary cases they disappear entirely by the fifth day. The results hitherto recorded are thus tabulated:—Forty-two cases treated by M. Le Gendre, cures 69 per cent.; 112 cases treated by M. Moizard, cures 85 per cent.; sixty-seven cases treated by M. Hulot, cures 95 per cent. Of M. Hulot's cases forty-one were controlled by cultures on serum. Dr. Moizard considers this method to be superior to all others tried by him, and he states that he saved his own child's life by this means. The lesser frequency of manipulation constitutes, of itself, an advantage over other methods. I may add that steresol, locally applied, has proved effective in my own hands, abundant sluicing of the fauces with boric solution being had recourse to in the intervals of the applications.

Aug. 14th.

Obituary.

HENRY WEEKES, F.R.C.S. ENG., L.S.A.

HENRY WEEKES was born at Barnstaple in 1814, being the younger son of an old Devonshire family. After leaving school he decided to adopt medicine as a profession. For that purpose he became a student at University College, London, where he obtained a silver medal for physiology in 1836. Here he was contemporary with Ellis, Erichsen, Morton, and other well-known men. He qualified in 1836, taking the M.R.C.S. Eng. and L.S.A.; afterwards he studied medicine in Paris at the Hôpital de la Charité. Having a taste for travel, he became appointed colonial surgeon to the New Zealand Company. In that capacity he took medical charge of a ship filled with emigrants bound to New Plymouth, in that colony, in 1841. All his passengers were landed without a death, after a long voyage. After a year or two's residence in Taranaki, Mr. Weekes resigned his appointment, returned to England, and married. Being convinced, however, that New Zealand had a great future before her, he sailed again for that country, and bought property in the vicinity of Auckland, including an island in the Manakau which still bears his name. In 1848 gold was discovered in California, and Mr. Weekes decided to try his luck in a new country. He established himself in Los Angelos and soon was in possession of a large surgical practice there. Much of his work consisted in the treatment of arrow wounds inflicted on miners by local hostile Indians. He often had to make long journeys with the instruments of healing in one hand and a loaded revolver in the other. After spending five years in California Mr. Weekes returned again to New Zealand after a preliminary visit to England. This time he settled in practice at Onehunga, a few miles from Auckland. Here he remained for ten years. During that time he became senior surgeon to the Auckland Militia, in which capacity he saw active service during the Maori war of 1863–65. About the same time he became entrusted with the Commission of the Peace, and was known as an energetic member of the local bench during the remainder of his stay in the colony. Gold being found in great quantities on the Thames, New Zealand, and a large population springing up there, which drained other districts of their inhabitants, Mr. Weekes removed thither and was at once appointed senior surgeon to the Thames Hospital. In 1871 he returned to England, obtained the degree of F.R.C.S. Eng., and commenced practice at Southampton. After a few years here, for climatic reasons he removed to Melksham, Wilts, where he held the post of medical officer of health. Still finding himself unable to cope with the rigours of an English winter, Mr. Weekes decided to try what a residence in Barcelona, Spain, would do for him. This was such a success that he remained there for several years. Whilst there his professional services were in much request among the English colony in that city. Finally, in 1889, he retired from all active work and made his last home in Barnstaple, where he died on July 20th, 1894, after a lingering illness, leaving a widow and two children. In addition to being a skilful surgeon, Mr. Weekes was gifted in other ways; he was a first-rate musician and an excellent draughtsman. He was the author of "Sanitary Reports, New Zealand," and "A Catechism of Health," and contributed many articles to the medical journals, chiefly on climatic subjects, of which he had a profound personal knowledge.

[2] Loc. cit. [3] Loc. cit.
[4] Jour. de Méd. et Chirurg. Pratiques.

JOHN THOMAS SLATER, M.D., C.M. GLASG.

THORNHILL-SQUARE and the adjoining part of Caledonian-road were the scene of a large and sympathetic crowd on Saturday last to witness the funeral of Dr. Slater. Dr. Slater was born in Ormskirk, Lancashire, in 1840. He was educated at Knutsford Grammar School, Cheshire. From there he went to Glasgow University, where he graduated M.D. in 1861. He commenced practice the next year and in 1862 was married. He leaves no family, but Mrs. Slater survives him, having done much by close attention in his long illness to prolong his life. In June, 1892, Dr. Slater was attacked with what seemed to be a sunstroke. He recovered to a great extent, but never perfectly, from this condition. Symptoms of glycosuria, albuminuria, and other organic disease subsequently showed themselves, with occasional attacks of pneumonia. For the last two months his case had gradually deepened in severity, and he succumbed on Aug. 3rd. He was one of those men who found time not only for a considerable practice—largely among the poor, by whom he was greatly trusted and esteemed—but for public work in the vestry of Islington and on the board of guardians. He took special pleasure in the work of the board of guardians and was considerate of the poor. It is difficult to know how he did so many different kinds of work. His funeral showed that, in the opinion of his colleagues and of his patients, he had done it so as to secure their regard, and that his death was a loss to them all.

CHARLES PETRE LOVELL, M.A., M.B., B.CH. OXON., M.R.C.P. LOND.

WE regret to have to record the death of Dr. Charles Petre Lovell, which occurred under peculiarly painful circumstances on July 29th. Dr. Lovell was spending the day on the Thames, when, on account of an approaching storm, he sought refuge under a bridge at Cookham. By some means or other the boat unfortunately capsized, and he became entangled in the weeds in such a manner that all efforts to save himself proved futile. Dr. Lovell was nearly thirty-three years of age and was educated at Merchant Taylors' School, of which he was a senior scholar. He subsequently obtained a scholarship at St. John's College, Oxford, and in 1881 proceeded to pursue his studies there. In 1885 he took an honours degree, and in 1888 he entered St. Thomas's Hospital as a Natural Science scholar. Here he won reputation in many respects, for not only was he an excellent

athlete, but he also obtained the Peacock Scholarship and other distinctions. Having qualified, he filled the post of house physician at St. Thomas's Hospital and forthwith commenced practice in Wimbledon, where his ability was widely known. About this time, too, he became a Member of the Royal College of Physicians of London. Being desirous of London work, he recently took a house in Porchester-square, and here he was already doing well. Dr. Lovell was a member of several learned societies and a man of extremely fine ability. It is sad that his career has been so prematurely cut short, and the deepest sympathy is felt for his widow.

DEATHS OF FOREIGN MEDICAL MEN.—The deaths of the following members of the medical profession abroad are announced:—Dr. Rollet, Professor of Hygiene in the Lyons Medical Faculty; Dr. Michele Lessona, an Italian Senator; Dr. Mikhail A. Khomyakoff, Professor of Clinical Therapeutics in the University of Kazan; Dr. E. F. Sperk, Director of the Institute of Experimental Medicine, St. Petersburg.

Medical News.

UNIVERSITY OF LONDON.—INTERMEDIATE EXAMINATION IN MEDICINE.—The following candidates passed in honours at the examination held in July, 1894, in the subjects indicated below:—

ANATOMY.

First Class.—*Charles Bolton, University College; †James Beatty, Trinity College, Dublin; ‡Charles Roberts, Middlesex Hospital.
Second Class.—Francis Riley, Westminster Hospital; John Stuart Ross, Owens College; George Kenny Levick, Guy's Hospital.
Third Class.—Joseph George Emanuel, B.Sc., Mason College; James Victor Hartley, Yorkshire College; Alfred Walter Sikes, B.Sc., St. Thomas's Hospital.

PHYSIOLOGY AND HISTOLOGY.

First Class.—†Victor Evelyn Collins, Guy's Hospital; †Ralph Paul Williams, King's College.
Second Class.—Francis Riley, Westminster Hospital; Alfred Walter Sikes, St. Thomas's Hospital.
Third Class.—Charles Bolton, University College.

ORGANIC CHEMISTRY.

First Class.—*Alfred Walter Sikes, St. Thomas's Hospital; Howard Edward Wise, Middlesex Hospital.
Third Class.—Thomas J. Horder, B.Sc., St. Bartholomew's Hospital; Joseph George Emanuel, Mason College.

MATERIA MEDICA AND PHARMACEUTICAL CHEMISTRY.

First Class.—*Ralph Paul Williams, King's College.
Second Class.—John Howell, Guy's Hospital; Emile Dupont Aubin, Middlesex Hospital; Charles Roberts, Middlesex Hospital.
Third Class.—Alfred Howell, St. Mary's Hospital and Birkbeck Institute; George Kenny Levick, Guy's Hospital; Alfred Walter Sikes, St. Thomas's Hospital.

* Exhibition and Gold Medal. † Gold Medal.
‡ Obtained the number of marks qualifying for a Gold Medal.

The following candidates passed in the subjects named below:—

ENTIRE EXAMINATION.

First Division.—Archibald Robert Douglas, St. Bartholomew's Hospital; Mary Buchan Douie, London School of Medicine and Pharmaceutical Society; Arthur Henry Evans, Westminster Hospital; Edward Joseph Fox, Owens College; George Frederick Saunders Genge, Westminster Hospital; F. Claude Bromley Gittings, Middlesex Hospital; Frank Wilhelm Goldie, Guy's Hospital; Urania Latham, London School of Medicine for Women; Frank Butler Thornton, St. Thomas's Hospital; Wilfrid Batten Lewis Trotter, University College; William Charrington Wood, St. Mary's Hospital.
Second Division.—Louisa Garrett Anderson, London School of Medicine for Women; William Bury Anderton, Owens College; Sidney Herbert Berry, Charing-cross Hospital; William Francis Victor Bonney, Middlesex Hospital; Alfred Burn, St. Mary's Hospital and Birkbeck Institute; Malcolm Cameron, London Hospital; Joseph Henry Churchill, St. Bartholomew's Hospital; Colin Campbell Clarkson, University College; Harold Merriman Cooper, St. George's Hospital; John Morton Sim Coutts, University College; Edward Charles Davenport, London Hospital; Avery Wynn Dickson, St. Bartholomew's Hospital; James Allen Dredge, St. Bartholomew's Hospital; Arthur Earnshaw, Guy's Hospital; George Richard Elwin, St. Mary's Hospital; Frederick Arthur Field, St. Bartholomew's Hospital; Edward Fisk, Guy's Hospital; A. Brownfield Fry, London Hospital; Leonard Gilbert, St. Thomas's Hospital; Cecil Frederick Gordon, St. Bartholomew's Hospital; William Joshua Harding, St. Bartholomew's Hospital; Spencer Hunt, St. Bartholomew's Hospital; George Hutcheson, London Hospital; Herbert William Jackson, University College; Arthur Edward Jerman, Westminster Hospital; Richard Kay, Guy's Hospital; Sarah Kaye, London School of Medicine for Women; Harold Leader, Guy's Hospital; William Liversidge, University College; Aubrey Alfred Montague, St. Thomas's Hospital; John Thomas Roberts, Guy's Hospital; Thomas O'Neill Roe, University College; Edward Lionel M. Rusby, King's College; Justus Martin Schaub, King's College; Joseph Shardlow, University College; Edmund Ivens Spriggs, Guy's Hospital; George Herbert Warren, London Hospital; Harold Weeks, St. Bartholomew's Hospital; Stanley Whicher, Guy's Hospital.

EXCLUDING PHYSIOLOGY.

First Division.—Herbert Mundy, St. Bartholomew's Hospital; Claude Rundle, St. Mary's Hospital; James Percival Scatchard, St. Thomas's Hospital.
Second Division.—John Arthur Percival Barnes, St. Bartholomew's Hospital; Henry Norman Goode, St. Thomas's Hospital; Frank R. Greenwood, Mason College; Hugh Fraser Mantell, St. Mary's Hospital; Charles Standford Read, University College; Clive Riviere, St. Bartholomew's Hospital; Stanley Francis Smith, St. Bartholomew's Hospital; Henry Sugden, St. Mary's Hospital; Leonard Kirkby Thomas, Queen's and Mason Colleges, Birmingham; William Wrangham, St. Bartholomew's Hospital.

PHYSIOLOGY ONLY.

First Division.—John Francis Bill, St. Bartholomew's Hospital; John Hanna Murray, University College.
Second Division.—Richard Hamilton Ashwin, Guy's Hospital; Jamsetji N. Bahadhurji, University College; Frederick William Binckes, St. Thomas's Hospital; Stanley Longhurst Box, St. Bartholomew's Hospital; Percy Ward Brigstocke, St. Bartholomew's Hospital; Douglas Henry Fawcett Cowin, St. Bartholomew's Hospital; Frances Ede, London School of Medicine for Women; Ernest George Leopold Goffe, University College; John Temple Leon, B.Sc., St. Mary's Hospital; Leonard Freeman Marks, St. Bartholomew's Hospital; Eldon Pratt, St. Bartholomew's Hospital; John Walter Forbes Rait, University College; Arthur Herbert Spicer, Guy's Hospital; Alexander Benjamin Tucker, St. Bartholomew's Hospital.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—**The following gentlemen, having previously passed the necessary examinations, and having conformed to the by-laws and regulations and attained the legal age of twenty-five years, were at the ordinary meeting of the Council on Monday, July 30th, admitted Fellows of the College:—**

Daldy, Arthur Mantell, M.B. and B.S. Lond., L.R.C.P. Lond., Guy's Hospital, Diploma of Member dated Nov. 12th, 1891.
Bunch, Frank Vigers, L.R.C.P. Lond., University College Hospital, Diploma of Member dated Aug. 1st, 1892.
Scotson, Frederick Charles, M.B. Lond., L.R.C.P. Lond., Owens College and Royal Infirmary, Manchester, Diploma of Member dated Aug. 1st, 1892.
Durham, Herbert Edward, M.B. and B.C. Cantab., Guy's Hospital, not previously a Member.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—**The following gentlemen passed the First Examination of the Board, at the quarterly meeting of the Examiners, in the subjects indicated.**

Passed in Part I., Chemistry and Physics, under the Five Years Regulations:

Acland, Hugh Thomas Dyke, St. Thomas's Hospital.
Adams, Harold Cotterell, Middlesex Hospital.
Agate, Henry S. Arnaund, St. Mary's Hospital.
Ainscow, James, Owens College, Manchester.
Alcock, William, Firth College, Sheffield.
Aldous, Herbert James, King's College, London.
Allen, Thomas Percival, St. Bartholomew's Hospital.
Allport, Roland Harrison, St. Thomas's Hospital.
Baiss, Llewelyan Arnold, St. Bartholomew's Hospital.
Baker, William Langworthy, Guy's Hospital.
Barker, Maurice Raine, St. Mary's Hospital.
Barnes, John Alfred, St. Thomas's Hospital.
Barrow, Harold Percy Walter, Guy's Hospital.
Barwell, Francis Reinagle, University College, London.
Bateman, Arthur St. John, King's College, London.
Bates, George Llewellyn, Charing-cross Hospital.
Bawtree, Frank, St. Thomas's Hospital.
Bentley, Saville, Firth College, Sheffield.
Berryman, Edmund Newton, St. Bartholomew's Hospital.
Brewer, Alexander Hampton, St. Bartholomew's Hospital.
Bristowe, Vivian Ernest John, St. Thomas's Hospital.
Bullmore, Edward Augustus, University College, London.
Caley, Malcolm Clement, St. Mary's Hospital.
Campbell, George Gunning, St. Bartholomew's Hospital.
Cathcart, George Eliott, St. Bartholomew's Hospital.
Churchill, George Brooke Forbes, Guy's Hospital.
Clarke, Henry Hugh Rose, St. Thomas's Hospital.
Coleman, Frank, Pharmaceutical Society of Great Britain.
Cornish, Charles Vivian, St. Bartholomew's Hospital.
Court, Edward Percy, St. Bartholomew's Hospital.
Croneen, Alfred, Guy's Hospital.
Curtiss, Arthur William Slatter, Yorkshire College, Leeds.
Davies, Daniel, University College of Wales, Aberystwith, and St. Bartholomew's Hospital.
Dawson, Meredith Broderick, Middlesex Hospital.
Dewick, George, St. Thomas's Hospital.
Douglas, James Carfrae, Middlesex Hospital.
Dowman, Charles Darby Allen, St. Bartholomew's Hospital.
Durrance, William Arthur, Westminster Hospital.
Dyson, John Newton, Guy's Hospital.
Edgelow, George William Hennen, London Hospital.
Edington, Ernest Adolphus, University College, London.
Edwards, David Richard, University College of South Wales, Cardiff.
Edwards, Henry Herbert Johnson, St. Thomas's Hospital.
Eldred, Arthur George, London Hospital.
Ellery, Richard Frank, St. Bartholomew's Hospital.
Elworthy, Henry Herbert, Westminster Hospital.
Evans, Arthur John, University College Hospital.
Ferguson, Reginald John de Gale, University College Hospital.

Fisher, Herbert Wortley, London Hospital.
Fleming, John Kenneth Sprot, St. Bartholomew's Hospital.
Frost, Joseph Reginald, Merchant Venturers' School, Bristol.
Fuller, Laurence Otway, University College, London.
Goodbody, Cecil Maurice, St. Thomas's Hospital.
Goodman, Harold, St. Bartholomew's Hospital.
Graham, Allan Gordon, St. Thomas's Hospital.
Grant, Alexander William Harvey, Charing-cross Hospital.
Greaves, Herbert Stanley, St. Bartholomew's Hospital.
Grenfell, Pascoe Bevil, St. Bartholomew's Hospital.
Groube, George Patrick Thomson, St. Mary's Hospital.
Gwynn, Herbert Victor, St. Bartholomew's Hospital.
Hall, Richard Charles Baker, Queen's College, Birmingham.
Hakansson, Lorentz Vilhelm, St. Mary's Hospital.
Hamerton, Albert Ernest, Yorkshire College, Leeds.
Hamilton, William Gavin, St. Bartholomew's Hospital.
Hammond, Charles Arthur, St. Mary's Hospital.
Hanbury, Saville Waldron, St. Thomas's Hospital.
Harness, Henri Nelson, King's College, London.
Harris, William Bradshaw, St. Mary's Hospital.
Hartley, John Dawson, St. Bartholomew's Hospital.
Hearn, Ethelbert, Firth College, Sheffield.
Henshaw, William Alfred, Queen's College, Birmingham.
Herklots, Gerard Andreas, University College, London.
Hewlett, Cyril James, Guy's Hospital.
Higgins, Alexander George, St. Bartholomew's Hospital.
Hillier, William Thomas, Middlesex Hospital and University College of South Wales, Cardiff.
Hipwell, Harry, Middlesex Hospital.
Hope, Walter Bayard, Guy's Hospital.
Horridge, Frank, St. Bartholomew's Hospital.
Howell, Frank Musgrave, St. Bartholomew's Hospital.
Howells, Jenkin, Guy's Hospital.
Howlett, Bernard Featherstone, St. Thomas's Hospital.
Humphry, Lawrence, Guy's Hospital.
Hutchinson, George Arnold, St. Mary's Hospital.
James, Charles Wilmot Wanklyn, Clifton Laboratory.
James, Frederick William, University College, London.
Jeaffreson, Dudley, Epsom College.
Johnson, Alfred, University College, Liverpool.
Jones, William Edmund, Owens College, Manchester.
Kirkman, Albert Henry Beaumont, Guy's Hospital.
Lambert, Ernest Charles, Westminster Hospital.
Landon, Thomas Hamlyn Whittington, Guy's Hospital.
Leonard, William Hugh, St. Bartholomew's Hospital.
Lewis, Arthur Daniel, Guy's Hospital.
Libby, Harold Samuel, St. Thomas's Hospital.
Lightfoot, John Henry, St. Mary's Hospital.
Lobb, Hubert Peché, St. Bartholomew's Hospital.
Lucas, Stanley Arthur, Cambridge University and St. Thomas's Hospital.
McEnnery, Ambrose Richard, Dublin.
McGavin, Lawrie Hugh, Guy's Hospital.
McIntyre, Daniel, Owens College, Manchester.
McLachlan, Arthur Ronald, Guy's Hospital.
Maltby, William Ernest George, St. Bartholomew's Hospital.
Mann, Henry Thomas, St. Mary's Hospital.
Martin, Malcolm Murcott, St. Bartholomew's Hospital.
Mason, Samuel, St. Bartholomew's Hospital.
Milnthorp, Richard, Yorkshire College, Leeds.
Morris, Isaac Llywelyn, St. Bartholomew's Hospital.
Musgrove, Edward Hugh, University College of South Wales, Cardiff.
Nicholl, Ernest Edward, St. Thomas's Hospital.
Nicholson, Robert Porter, University College, London.
O'Hea, John, St. Bartholomew's Hospital.
Orford, Herbert John, Queen's College, Birmingham.
Orton, Lionel Edward, Queen's College, Birmingham.
Outred, Charles Deane, Guy's Hospital.
Page, Shirley, Queen's College, Birmingham.
Paira-Mall, Gilbert, London Hospital.
Partridge, Victor Stanley, Charing-cross Hospital.
Pearson, Roland Wilfred, Owens College, Manchester.
Pemberton, Walter D'Urban, St. Thomas's Hospital.
Penny, Augustus Greenwood, St. George's Hospital.
Perks, John, St. Bartholomew's Hospital.
Pettigrew, Michael Gladstone, Firth College, Sheffield.
Pickering, Harrold John, St. Bartholomew's Hospital.
Porter, William George, Charing-cross Hospital.
Powell, John Edward, Guy's Hospital.
Pring, Charles Herbert, University College, Bristol.
Pritchard, Robert John, Guy's Hospital.
Reid, Alfred, Guy's Hospital.
Rhodes, Thomas Basil, Queen's College, Birmingham.
Richards, Francis Graham, St. Bartholomew's Hospital.
Richardson, Irwin Browne, Mason College, Birmingham.
Richardson, Walter Silverwood, Guy's Hospital.
Roberts, George Augustus, King's College Hospital.
Roberts, John Haselwood, Guy's Hospital.
Robinson, Henry Harold, Owens College, Manchester.
Rose, Edmund Frederick, St. Bartholomew's Hospital.
Sanders, Basil Stanley, University College of South Wales, Cardiff.
Saunders, Leonard Dimock, King's College Hospital.
Sawdy, Edward Charles, St. Mary's Hospital.
Saward, Arthur Henry Michael, Guy's Hospital.
Shalden-Smith, Thomas, St. Mary's Hospital.
Sheldon, Walter Sirr, University College, London.
Shenton, Edward Warren Hine, Guy's Hospital.
Sherren, James, London Hospital.
Simpson, Graham Seales, Guy's Hospital.
Smallwood, George Valentine, Queen's College, Birmingham.
Smith, James Nicholson, Guy's Hospital.
Smith, Percy Nelson, St. Mary's Hospital.
Smith, Sydney, University College, London.
Sprague, Francis Henry, St. Mary's Hospital.
Stilwell, Henry Francis, St. Bartholomew's Hospital.
Stone, Gerald William, St. Bartholomew's Hospital.
Straton, Charles Henry, St. Mary's Hospital.
Talbot, Thomas Harrison, St. Bartholomew's Hospital.
Tetley, Thomas Walsh, Yorkshire College, Leeds.
Thomas, Arthur Richard, Guy's Hospital.
Thomas, Hugh Mortimer, University College, Bristol.
Thompson, William Atkin, Owens College, Manchester.
Thomson, Charles Bertram, Guy's Hospital.
Thwaites, Cyril Evered, St. Mary's Hospital.
Tripp, Walter John Pearce, University College, Bristol.
Unsworth, Noel, St. Thomas's Hospital.
Utting, Horace Ebbage, Queen's College, Birmingham.
Von Rosen, Alfred Dittlof Benedictus, St. Mary's Hospital.
Waters, Walter James, St. Thomas's Hospital.
Watson, Arthur John, St. Mary's Hospital.
Watson, Robert Nimmo, Westminster Hospital.
Webster, Harold George, University College, Liverpool.
Williams, Eric Wadlow, St. Mary's Hospital.
Willis, William Frederick, St. Mary's Hospital.
Wood-Hill, Henry Gilbert, St. Bartholomew's Hospital.
Wyndham, Thomas Lancelot, St. Bartholomew's Hospital.

Passed in Part II., Practical Pharmacy, under the Five Years Regulations:

Ainscow, James, Owens College, Manchester.
Alexander, Kenneth Bush, Guy's Hospital.
Baiss, Llewelyn Arnold, St. Bartholomew's Hospital.
Barham, Percy Cornelius, St. Bartholomew's Hospital.
Barton, Eustace Robert, University College, London.
Bateson, Vaughan, Yorkshire College, Leeds.
Bathurst, William Henry Isaacs, King's College, London.
Belilios, David, St. Mary's Hospital.
Berncastle, Herbert Melbourne, Guy's Hospital.
Beyer, Ernest Fritz Bertram, Queen's College, Manchester.
Bingham, Sydney Oliphant, St. Thomas's Hospital.
Blake, Frederick James Gay, Yorkshire College, Leeds.
Bourdas, Ernest Clarkson, St. Thomas's Hospital.
Boyle, William Francis, Charing-cross Hospital.
Bradley, John, Mason College, Birmingham.
Brown, Charles Harold Sequier, St. Thomas's Hospital.
Brown, James Warburton, Charing-cross Hospital.
Burd, Cyril Prichard, St. Bartholomew's Hospital.
Cardwell, Albert Edwin, London Hospital.
Coltart, Guy Hemming, Westminster Hospital.
Cuddon-Fletcher, Angus J. M'N., St. Bartholomew's Hospital.
Cullen, James Alfred Patrick, London Hospital.
Cuming, Richard Ingram, St. Thomas's Hospital.
Dawson, Thomas Denman, St. Bartholomew's Hospital.
Dixon, Robert Halstead, St. Mary's Hospital.
Douglas, James Corfrae, Middlesex Hospital.
Dowsett, Ernest Blair, Guy's Hospital.
Dudley, Edward Percy Hughes, St. Bartholomew's Hospital.
Dunlop, Charles Seymour S., University College, London.
Durance, William Arthur, Westminster Hospital.
Durbridge, Henry, Guy's Hospital.
Dyer, Harold, St. Mary's Hospital.
Eason, Herbert Lightfoot, Guy's Hospital.
Edwards, David Richard, University College of South Wales, Cardiff.
Everington, Herbert Devas, St. Bartholomew's Hospital.
Fairbank, Christian Beverley, University College, London.
Fairbank, Harold A. Thomas, Charing-cross Hospital.
Fell, Matthew Henry Grigson, St. Bartholomew's Hospital.
Fen, Charles Edward, King's College, London.
Fowke, William Cecil, Guy's Hospital.
Francia, Charles Louis, St. Bartholomew's Hospital.
Francis, Arthur Edward, University College, London.
Frost, Joseph Reginald, University College, Bristol.
Galloway, William Hearfield, Yorkshire College, Leeds.
Garne, Sydney William, Charing-cross Hospital.
Gask, George Ernest, St. Bartholomew's Hospital.
Gates, Edward Alfred, St. Thomas's Hospital.
Gibbins, Herbert Bowly, St. Bartholomew's Hospital.
Goddard, Eugène Gilbert, Guy's Hospital.
Groube, George P. Thomson, St. Mary's Hospital.
Hadley, Frederick Augustus, King's College, London.
Hammond, Charles Arthur, St. Mary's Hospital.
Hatfield, Ronald, St. Bartholomew's Hospital.
Hearn, Richard Strike Flemying, St. Bartholomew's Hospital.
Herbert, George Heywood, London Hospital.
Hillier, William Thomas, Middlesex Hospital and University College of South Wales, Cardiff.
Hine, Hugh Fritz-Neville, Middlesex Hospital.
Hoban, Thomas, St. Thomas's Hospital.
Hogan, Cyril Evelyn, St. Bartholomew's Hospital.
Hosken, James G. F., St. Bartholomew's Hospital.
Howlett, Bernard Featherstone, St. Thomas's Hospital.
Hunter, Irwin W. W., University of Otago and London Hospital.
Jones, Thomas, Middlesex Hospital.
Kay, Alfred Reginald, St. Bartholomew's Hospital.
Lambert, Ernest Charles, Westminster Hospital.
Lankester, Ralph A. Rogers, University College, London.
Leaning, Robert Crask, St. Mary's Hospital.
Leonard, William Hugh, St. Bartholomew's Hospital.
Lewis, Cotton Taylor, King's College, London.
Lindop, Llewellyn, St. Mary's Hospital.
Lloyd, Hugh Edward Drummond, St. Bartholomew's Hospital.
Long, William Christopher, St. Bartholomew's Hospital.
Longbotham, Jonathan Harry, Yorkshire College, Leeds.
Longhurst, Ernest Archibald, Guy's Hospital.
Lucas, Stanley Arthur, St. Thomas's Hospital.
Marriott, Oswald, Guy's Hospital.
Martin, Francis John Hensley, Guy's Hospital.
Mayhew, Christopher John, King's College, London.
Maynard, George Darell, Geneva University.
Meade, Warren, St. George's Hospital.
Middleton, Percy Ellward, Yorkshire College, Leeds.
Millen, Seymour Alfred, St. Bartholomew's Hospital.
Mowell, Richard Rothwell, King's College, London.
Neave, Sheffield, St. Bartholomew's Hospital.
Norman, Ralph, London Hospital.
Oliver, Arthur Cardell, University College of South Wales, Cardiff.

Orford, Herbert John, Mason College, Birmingham.
Orme, Alfred, London Hospital.
Partridge, Victor Stanley, Charing-cross Hospital.
Peach, William Frank, St. Mary's Hospital.
Pennington, S. B. A. C. C., Guy's Hospital.
Pickering, Harold John, St. Bartholomew's Hospital.
Pierce, Robert Wynne Charles, St. Thomas's Hospital.
Porter, William George, Charing-cross Hospital.
Price, Sydney Edgar, Mason College, Birmingham.
Raines, Robert, St. Bartholomew's Hospital.
Rhodes, James Herbert, St. Bartholomew's Hospital.
Roberts, George Augustus, King's College Hospital.
Roch, Horace Sampson, King's College Hospital.
Rogerson, Oswald Herbert, Yorkshire College, Leeds.
Rowe, William Trethowan, St. Bartholomew's Hospital.
Rowland, Penry William, St. Bartholomew's Hospital.
Scott, Henry Harold, St. Thomas's Hospital.
Sheppard, Francis Williams, St. Bartholomew's Hospital.
Simpson, John Edgar, private study.
Singer, Harold Douglas, St. Thomas's Hospital.
Smith, Thomas William, Charing-cross Hospital.
Straton, Charles Henry, St. Mary's Hospital.
Taunton, John Godfrey C., Mason College, Birmingham.
Taylor, Henry James, Owens College, Manchester.
Unwin, William Howard, Charing-cross, Hospital.
Utting, Horace Ebbage, Mason College, Birmingham.
Von Rosen, Alfred Dittloff B., St. Mary's Hospital.
Vosper, Percy, King's College, London.
Wagstaff, Charles Bertrand, Charing-cross Hospital.
Waller, Herbert Ewan, St. Bartholomew's Hospital.
Watson, Charles Gordon, St. Bartholomew's Hospital.
Weaver, Laurence Walter William, University College, Bristol.
Williams, Percy Glyn Savours, University College, London.
Wortley, Ernest Dixon, St. Bartholomew's Hospital.
Wraith, Ernest Arnold, Yorkshire College, Leeds.
Wroughton, Arthur Oliver Bird, St. Bartholomew's Hospital.
Young, Edward, London Hospital.

Passed in Part III., Elementary Biology, under the Five Years' Regulations:

Acland, Hugh Thomas Dyke, St. Thomas's Hospital.
Allen, Walter Thomas, London Hospital.
Alltree, George William, King's College, London.
Barrow, Harold Percy Waller, Guy's Hospital.
Blackstone, Charles Edgar, Middlesex Hospital.
Blake, Frederick James Gay, Yorkshire College, Leeds.
Blatchford, William Nichols, University College, Bristol.
Blythe, Thomas Thompson, St. Thomas's, Guy's, and London Hospitals.
Bullmore, Edward Augustus, University College, London.
Clarke, Henry Hugh Rose, St. Thomas's Hospital.
Coates, Frederick Arthur, University College, Bristol.
Cox, Franklin, University College, Bristol.
Davies, Walter Cecil Clarence C., St. Mary's Hospital.
De Freitas, Quirino Bonifacio, King's College, London.
Dowsett, Ernest Blair, Guy's Hospital.
Düben, Adrian Cæsar von, St. Thomas's Hospital.
Eastment, Gerald Meade, Middlesex Hospital.
Evans, Arthur Robert, University College of South Wales, Cardiff.
Fawcett, Thomas Albert Edward, Yorkshire College, Leeds.
Featherstone, Frank Reginald, Guy's Hospital.
Fisher, Herbert Wortley, London Hospital.
Fleming, Edward Joseph, Westminster Hospital.
Forbes, John, St. George's Hospital.
Fowke, William Cecil, Guy's Hospital.
Frost, Joseph Reginald, Merchant Venturers' School, Bristol.
Fuller, Laurence Otway, University College, London.
Gardiner, Percy, Middlesex Hospital.
Gee, Claude Alfred Heath, Merchant Venturers' School, Bristol.
Harvey, John Owen, Mason College, Birmingham.
Hogan, Roger Joseph, London Hospital.
Hopkins, William George, St. Mary's Hospital.
Horton, Horatio Nelson, Middlesex Hospital.
Howroyd, James Edwin, Yorkshire College, Leeds.
Hughes, Norman Alexander A., Yorkshire College, Leeds.
Hunter, Percy Douglas, Guy's Hospital.
Irvine, Guy Harle, University College, Bristol.
Jeaffreson, Dudley, Epsom College.
Johnson, Alfred, University College, Liverpool.
Johnson, William, Guy's Hospital.
Jones, William Edmund, Owens College, Manchester.
Kennard, Douglas Frederick, St. Mary's Hospital.
Landon, Thomas Hamlyn W., Guy's Hospital.
Lewis, Arthur Cedric, Guy's Hospital.
Lister, Walter, Yorkshire College, Leeds.
Longbotham, Jonathan Harry, Yorkshire College, Leeds.
Lowndes, Douglas Victor, London Hospital.
McQueen, Robert Martin, University College, Bristol.
Mansell, Thomas, St. Thomas's Hospital.
Merry, Edward, London Hospital.
Millar, Ernest Richard, University College, London.
Morley, Arthur Solomon, St. George's Hospital.
Mounsey, Ridley Ewart, St. George's Hospital.
Mules, John Howard, Guy's Hospital.
Newham, Hugh Basil Greaves, St. Thomas's Hospital.
Newton, Courtenay Howard, St. Thomas's Hospital.
Outred, Charles Deane, Guy's Hospital.
Partridge, Victor Stanley, Charing-cross Hospital.
Pearson, Roland Wilfred, Owens College, Manchester.
Penny, Sydney Greenwood, St. George's Hospital.
Perks, Alfred, Guy's Hospital.
Phillips, James, University College, Bristol.
Phillips, Norman Routh, London Hospital.
Powell, John Edward, Guy's Hospital.
Pritchard, Robert John, Guy's Hospital.
Pritchard, Sydney Clifford, King's College, London.
Pritchett, George William Morris, University College, London.
Read, Arthur, Guy's Hospital.
Rickard, Cecil Rodney, Middlesex Hospital.
Sanders, James Herbert, London Hospital.
Sherren, James, London Hospital.
Smith, Hugh, Mason College, Birmingham.
Smith, James Nicholson, Guy's Hospital.
Soderburg, John Emil, Westminster Hospital.
Tarbet, Peter Rowley, University College, London.
Thomas, David Jones, London Hospital.
Thomas, Hugh Mortimer, University College, Bristol.
Ward, Percy Harold, Guy's Hospital.
Waters, Walter James, St. Thomas's Hospital.
Watson, Charles Gordon, St. Bartholomew's Hospital.
Watson, Robert Nimmo, Westminster Hospital.
Willcox, Samuel Joseph, Merchant Venturers' School, Bristol.
Williams, Norman, Guy's Hospital.
Wilson, Arthur Harold, Mason College, Birmingham.
Wood, Charles Herbert, University College, London.
Woodyatt, Henry Constantine, Owens College, Manchester.
Wraith, Ernest Arnold, Yorkshire College, Leeds.
Young, Edward, London Hospital.
Yvanovich, Guilherme Antonio, St. Thomas's Hospital.

Part IV., Elementary Anatomy, under the Five Years' Regulations:—

Abadgian, Alexander Yatessian, London Hospital.
Agar, William Harold, University College, London.
Andrus, William Harold, University College, London.
Andrus, William, London Hospital.
Barron, Henry Thompson, Westminster Hospital.
Bignold, Henry Howe, Guy's Hospital.
Blackstone, Charles Edgar, Middlesex Hospital.
Blatchford, William Nichols, University College, Bristol.
Bond, Frank Fouracre, Westminster Hospital.
Brewer, Alexander Hampton, St. Bartholomew's Hospital.
Bristowe, Vivian Ernest John, St. Thomas's Hospital.
Cammidge, Percy John, St. Bartholomew's Hospital.
Cazenove, William Reginald, Guy's Hospital.
Churchill, George Brooke Forbes, Guy's Hospital.
Clarke, Arthur Ernest, Guy's Hospital.
Clements, Edward Cecil, Middlesex Hospital.
Coates, Frederick Arthur, University College, Bristol.
Cotton, Frederick William, University College, Bristol.
Crew, Edward John, Guy's Hospital.
Davies, David, University College, London.
Davies, Thomas Sidney, University College, Bristol.
Davies, Walter Cecil Clarence C., St. Mary's Hospital.
De Couteau, Joseph Saph, Guy's Hospital.
De Freitas, Quirino Bonifacio, King's College, London.
Dodd, Arthur Myddleton, University College, Liverpool.
Dunlop, Charles Seymour Strickland, University College, London.
Ekins, Charles Maxwell, University College, London.
Eldred, Arthur George, London Hospital.
Elworthy, Henry Herbert, Westminster Hospital.
Fleming, Edward Joseph, Westminster Hospital.
Fleming, John Kenneth Sprot, St. Bartholomew's Hospital.
French, Frank Austin, St. Mary's Hospital.
Gardiner, Percy, Middlesex Hospital.
Gaster, Sidney, London Hospital.
Harrison, James Hughes, Firth College, Sheffield.
Harrison, William Walter, Guy's Hospital.
Hart, John Hamilton, St. Thomas's Hospital.
Hatfield, Ronald, St. Bartholomew's Hospital.
Higgins, Alexander George, St. Bartholomew's Hospital.
Hill, Leonard Vincent, Firth College, Sheffield.
Hipwell, Harry, Middlesex Hospital.
Hope, Percy Lake, St. Thomas's Hospital.
Hughes, Alexander Aylmer, Yorkshire College, Leeds.
Humphrey, Laurence, Guy's Hospital.
Hunt, Albert William D., Middlesex Hospital.
Hunter, Irwin Walter William, Otago University and London Hospital.
Hunter, Percy Douglas, Guy's Hospital.
Irvine, Guy Harle, University College, Bristol.
Kennard, Douglas Frederick, St. Mary's Hospital.
Kilpatrick, James Armstrong, University College of South Wales, Cardiff.
Landon, Thomas Hamlyn W., Guy's Hospital.
McQueen, Robert Martin, University College, Bristol.
Maltby, William Ernest George, St. Bartholomew's Hospital.
Noakes, Fred., Charing-cross Hospital.
Nunn, John Wilfred, St. Bartholomew's Hospital.
Orme, Alfred, London Hospital.
Paira-Mall, Gilbert, London Hospital.
Parrett, Edward Erratt, Guy's Hospital.
Partridge, Victor Stanley, Charing-cross Hospital.
Penny, Sydney Greenwood, St. George's Hospital.
Pritchard, Robert John, Guy's Hospital.
Richards, Francis Graham, St. Bartholomew's Hospital.
Rickard, Cecil Rodney, Middlesex Hospital.
Roberts, John Haselwood, Guy's Hospital.
Robinson, Henry Harold, Owens College, Manchester.
Silas, Walter Biscombe, Westminster Hospital.
Smith, Christian William B., St. Bartholomew's Hospital.
Smith, Leonard Satchwell, Mason College, Birmingham.
Spencer, Alfred Richard, University College, London.
Stolterfoth, Charles Sigismund, University College, Liverpool.
Tarbet, Peter Rowley, University College, London.
Taylor, Henry James, Owens College, Manchester.
Thompson, William Atkin, Owens College, Manchester.
Turner, Harry Stanley, Guy's Hospital.
Watson, Cecil Francis, Guy's Hospital.
Welsh, George Harry Richard, London Hospital.
West, John Frederick, Mason College, Birmingham.
Whitaker, Leonard Edgar, St. Bartholomew's Hospital.
Williams, Norman, Guy's Hospital.
Wood, Charles Herbert, University College, London.
Woodyatt, Henry Constantine, Owens College, Manchester.

UNIVERSITY OF EDINBURGH.—On Aug. 1st the following candidates were recommended to receive the degrees named below :—

THE DEGREE OF DOCTOR OF MEDICINE.

*Anderson, Douglas Hamilton, England, M.B., C.M.
†Berry, Richard James Arthur, England, M.B., C.M.
Brown, Francis Leonard, M.A., France, M.B., C.M.
‡Bruce, Lewis Campbell, Scotland, M.B., C.M.
Buist, Robert Cochrane, M.A., Scotland, M.B., C.M.
*Cameron, James, Scotland, M.B., C.M.
Compton, John William, England, M.B., C.M.
Dardenne, Henri, Mauritius, M.B., C.M.
*Davies, Harold Roberts Lloyd, England, M.B., C.M.
*Drummond, Russell John, India, M.B., C.M.
*Elkins, Frank Ashby, England, M.B., C.M.
*Elliot, Andrew, M.A., Scotland, M.B., C.M.
Elliot, Samuel, Scotland, M.B., C.M.
Evans, Owen Foulkes, Wales, M.B., C.M.
Everard, Horace Nathaniel, England, M.B., C.M.
Ewan, John Alfred, M.A., Scotland, M.B., C.M.
†Fischer, Ernest Cotton, Scotland, M.B., C.M.
Foster, Francis Troughton, New Zealand, M.B., C.M.
Gordon, William, England, M.B., C.M.
Griffiths, Benjamin, Wales, M.B., C.M.
Haslam, Alfred Joseph, England, M.B., C.M.
Hawkins, Edgar, M.A., England, M.B., C.M.
Hillier, Sidney, England, M.B., C.M.
‡Hutton, William Menzies, Scotland, M.B., C.M.
Jackson, John Lowthian, England, M.B., C.M.
Johnston, John William, Scotland, M.B., C.M.
Kirkpatrick, Roger, India, M.B., C.M.
†Lackie, James Lamond, Scotland, M.B., C.M.
Littlejohn, Edward Sydney, B.A., Canada, M.B., C.M.
*M'Donald, James, Wales, M.B., C.M.
M'Intosh, John Robertson, B.A., Canada, M.B., C.M.
*Mackay, Henry John, Scotland, M.B., C.M.
M'Kenzie, Harry Valentine, India, M.B., C.M.
M'Lennan, John Macdonald, M.A., Scotland, M.B., C.M.
Macmillan, David, M.A., Scotland, M.B., C.M.
Macmorran, Adam Henry Muir, Scotland, M.B., C.M.
Macqueen, Archibald, Scotland, M.B., C.M.
‡Mann, Gustav, India, M.B., C.M.
*Marshall, George Balfour, Scotland, M.B., C.M.
Meikle, Alexander, Jamieson, Scotland, M.B., C.M.
†Melville, Alexander Kennedy, Scotland, M.B., C.M.
‡Menzies, James Acworth, Scotland, M.B., C.M.
Mickle, Arthur William Thomas Flintoff, England, M.B., C.M.
Milroy, William Cunningham M.A., Scotland, M.B., C.M.
Moffat, John Gay, Scotland, M.B., C.M.
*Munro, John Douglas Ross, England, M.B., C.M.
Musgrove, Charles David, England, M.B., C.M.
Parry, Thomas Llewelyn, Wales, M.B., C.M.
Reid, James Maclagan, Scotland, M.B., C.M.
*Ridley, John Brooke, England, M.B., C.M.
*Shiach, Samuel Allan, Scotland, M.B., C.M.
*Smith, Edmund Moody, England, M.B., C.M.
Smith, James, Scotland, M.B., C.M.
‡Stanley, John Douglas, Ireland, M.B., C.M.
Stewart, Kenneth Trevor, England, M.B., C.M.
Tate, George Temple, England, M.B., C.M.
†Turner, Arthur Logan, Scotland, M.B., C.M.
*Wade, George, Scotland, M.B., C.M.
*Whyte, James Curtis, Scotland, M.B., C.M.
Wickham, Harry Townshend, England, M.B., C.M.
Wield, David, M.A., Scotland, M.B., C.M.
*Wilson, John Johnstone, Scotland, M.B., C.M.
Wyse, Richard, M.A., Scotland, M.B., C.M.
*Young, William, New Zealand, M.B., C.M.

* Commended for their dissertations.
† Deemed worthy of competing for the dissertation gold medals.
‡ Those who have obtained gold medals for their dissertations.

THE DEGREES OF BACHELOR OF MEDICINE AND MASTER IN SURGERY.

Adams, William David, M.A., Scotland.
Adamson, Charles Henry, Australia.
Aitken, Charles Crawford, Scotland.
Aitken, Charles James Hill, Scotland.
Alexis, George Nelson, West Indies.
Allison, Samuel Hoslett Browne, B.A., Ireland.
Anderson, John William, New Zealand.
Anderson, Robert Yuill, Scotland.
Atkinson, Juan Carlos, Chili.
Ayres, Charles, B.A., Australia.
Balfour, Andrew, Scotland.
Bartlett, Thomas Mackenzie, Jamaica.
Bateson, Henry, England.
§ Beattie, James Martin, M.A., New Zealand.
‖ Beesley, Robert William, England.
Bethune, William, Scotland.
Bond, Reginald St. George Smallridge, England.
Borrie, William Henry, New Zealand.
Bremner, Alexander, Scotland.
‖ Briggs, Robert Ward, England.
Broad, Benjamin William, England.
Brown, Henry Reynolds, M.A., Scotland.
Bruce, Robert Tennant, Scotland.
Bryce, William Henderson, Scotland.
Burnet, Morton, Scotland.
Burt, David John Stewart, New Zealand.
Campbell, Alexander John, Scotland.
‖ Campbell, Alexander Keith, Scotland.
Cantrell, Charles Seaward, New Zealand.
Chapman, Osmund Harry, England.
Chapman, Philip Francis, England.
Clark, Ronald Murray, Scotland.
Cochrane, Robert, M.A., Scotland.
Coutts, James Allan, Scotland.
Craig, William Bannerman, M.A., Scotland.
Crichton, David Macquorn Rankine, Scotland.
Crosby, Henry Mair, Tasmania.
Dall, Alexander, M.A., Scotland.
Davidson, Robert Thomas, Scotland.
Dickson, George Alexander, Scotland.
Dodds, Ernest Ralph, England.
English, Evelyn Arthur Wallace, England.
Evans, Thomas, Wales.
Ewart, John Hoggan, India.
Fairweather, Francis Harold, England.
Fell, Richard William, England.
Fenton, James, Scotland.
Ferguson, Peter Joseph Henry, West Indies.
Finlay, Thomas, Scotland.
Flett, John Smith, M.A., B.Sc., Scotland.
Forrest, John Vincent, Antigua.
§ Fraser, Evan John Hewat, England.
Fraser, Simon, Scotland.
Fraser, William Charles, Scotland.
§ French, George Brooke, England.
Geddes, John William, Scotland.
Gibson, Andrew John, Scotland.
§ Gibson, Thomas, M.A., Ireland.
Gill, Herbert Hope, England.
§ Gilmour, John Rutherford, Scotland.
Goldie, James Oliphant, England.
Grant, Alex. Donald M'Kenzie, Scotland.
Grant, Lachlan, Scotland.
Grant, William Young, Scotland.
Gray, George Douglas, Scotland.
Gray, James, England.
Green, Herbert Melvill, England.
Gregorson, John Duncan, Scotland.
Grieve, Robert, England.
Haig, William, Scotland.
Hardman, Frederick Harwood, England.
Henderson, John, Scotland.
Herdman, Ronald Tydd, Scotland.
Hewlett, James Edgar, England.
Heys, Arthur, England.
Holmes, Edwin Richards, England.
Hudson, Godfrey, England.
Hughes, Percy Theodore, England.
Jamieson, John Kay, Scotland.
Jamieson, Thomas Hill, Scotland.
Johnstone, David Andrew, England.
Johnstone, Walter Edward, M.A., Scotland.
Jones, James Havard, Wales.
Jones, Thomas Henry, England.
Keighley, John William, England.
Kelly, Bruce Curtis, England.
Kenny, Thomas Bernard, West Indies.
Kidd, Alexander Edward, Scotland.
Laidlaw, David Fraser, Australia.
Laing, George Campbell, Scotland.
Laing, John Adolphus, New Zealand.
‖ Lassalle, Charles Francis, West Indies.
Lawrie, John, Scotland.
Legat, Robert Eddowes, Scotland.
Leicester, George Frederick, England.
Leslie, William, Scotland.
Lincoln, Joseph Maurice, Mauritius.
Lusk, Thomas Gibson, Ireland.
MacArthur, Donald Gregor, Scotland.
MacDougall, Alexander James, Scotland.
MacFadden, Cecil John Read, Ireland.
Macfarlane, John Alexander, Trinidad.
M'Ilroy, Alexander Joseph, New Zealand.
MacIver, John, Scotland.
Macphail, John Finlayson, M.A., Scotland.
Macpherson, James Fraser, Scotland.
‖ Macrae, James Donald, Scotland.
M'Vicar, Colin, M.A., Scotland.
Mailer, William, Scotland.
Mapleton, Harry Banbury, B.A., England.
‖ Marshall, Hezlett Hamilton, Australia.
Martine, William Robert, Scotland.
Mell, Felix Oswald Newton, India.
Menzies, James Morris, Scotland.
Messulam, Sidney, Turkey.
Mitchell, Archibald, Scotland.
Mitchell, William, Scotland.
Monsarrat, Keith Waldegrave, England.
Moore, Ernest Cottew.
Morris, Robert Owen, M.A., Wales.
Mowat, Robert Stewart, England.
Muir, John Reid, Scotland.
Münster, Harold Valdemar, Australia.
Murray, George Alexander, Scotland.
Nair, Taraveth Madaven, India.
Nicholson, John, Scotland.
Oliphant, Frank Binfield, England.
Orr, David, Scotland.
Owen, Corbet William, Wales.
Palmer, Arthur Aubrey, Australia.
Parkhurst, Rodie, England.
Paterson, George William Simla, Scotland.
Pearson, John Barnes, England.
Penfold, Thomas Cunningham, England.
Percival, Arthur Patrick, England.
Pereira, Joseph Michael, India.
Pettey, Tom, England.
Potter, Charles Edward, Scotland.
Price, David Rees, Wales.
‖ Pringle, Arthur Maxwell Nicholson, Scotland.
Proudfoot, Frank Grégoire, M.A., Scotland.
Prout, Edward de Carle, England.
Ragg, Philip Melancthon, England.
Reid, Albert, Scotland.
Riach, William, Scotland.
Richards, John Kildahl, Australia.
Richardson, Adam, Scotland.
Robertson, William Howell, Scotland.
Rodger, Alexander, Scotland.
Rose, Lachlan, M.A., Scotland.
Ross, Hugh, Scotland.
Ruston-Harrison, George Herbert, England.
Rutherford, James Mair.
Scott, James, Scotland.
Scott, Thomas Marshall, Scotland.
Sharp, Peter John, Scotland.
Shaw, George, Scotland.
Shaw, Thomas David Stuart, England.
Sibbald, Thomas Redpath Scott, Scotland.
Simpson, Charles Morton, Scotland.
Skinner, Stewart Sherwood, B.A., Canada.
Smith, Philip Douglas, Tasmania.
Smith, Robert William Innes, Scotland.
Smith, William Edward, Scotland.
Stafford, Alexander Milroy, Scotland.
Standing, John Graham, England.
§ Stephen, William Anderson, M.A., Scotland.
Steuart, Murray Babington, Scotland.
Steven, Hugh, Scotland.
Stevenson, Walter Lowther, Ireland.
§ Stewart, James Purves, M.A., Scotland.
Strapp, Walter Russell, Natal.
Struthers, John, Scotland.
Taylor, Frederick William, England.
Titterton, William Sanderson Steele, England.
Vaudin, Matthew Livingstone Mitchell, England.
Waal, Gideon Daniel De, Cape Colony.
Walker, James Samuel Hourston, Scotland.
Walker, James William Thompson, Scotland.
Walmsley, Frederick Thomas, England.
Ward, Francis, England.
Watson, James, Scotland.
Watts, Edward Croft, England.
Whitaker, Edmund Thomas, England.
Whytt, Alexander, Scotland.
Williams, Edward Davies, Wales.
Wishart, James M'Keachie, Scotland.
Wood, James Julius Hedley, India.
Woodhead, Herbert Miall, England.
Wright, Robert John Thom, M.A., Scotland.
Yule, George Pratt, Scotland.

§ With First-class Honours. ‖ With Second-class Honours.

The following awards have been made:—The Etties Scholarship, James Purves Stewart; the Beaney Prize in Anatomy and Surgery, James Purves Stewart; the Freeland-Barbour Fellowship in Anatomy, Physiology, and Pathology, Robert Ward Briggs; the Stark Scholarship in Clinical Medicine, Robert Hutchinson; the Gunning Victoria

Jubilee Prize in Physiology, Gustav Mann; the Gunning Victoria Jubilee Prize in Pathology, Robert Craig Dun; the Gunning Victoria Jubilee Prize in Surgery, R. J. A. Berry; the Buchanan Scholarship in Gynæcology, Robert William Beesley; the James Scott Scholarship in Midwifery, William Anderson Stephen; the Wightman Prize in Clinical Medicine, Keith Waldegrave Monsarrat.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—**At the July sittings of the Conjoint Examining Board of the Royal Colleges of Physicians and Surgeons of Edinburgh and Faculty of Physicians and Surgeons of Glasgow, held in Glasgow, the following candidates passed the respective examinations as undernoted:—**

First Examination.—Five Years' Course.—Harold Chaffers, Todmorden; William Wallace Dickie, Glasgow; Francis Henry Foulds, Chesterfield ("with distinction"); Henry Arthur Marquis, Padiham; Edward H. Harrison, Belfast; Ivan A. Jackson, Burton-on-Trent; Samuel N. Robinson, Ulverston; James Ross, Ballymena. Four Years' Course.—Henry N. Barnett, County Devon; John Boyd, Kilrea; Patrick J. Carty, Ireland; James L. Cormac, India; John Dunlop, Neilston; Patrick Heanen, Keady; Rupert H. Hunter, Repton; Edward R. Kellett, Carlow; Edwin Joseph Ling, Scarborough; Bartholomew F. Murphy, Cork; Michael P. O'Brien, Cork; Robert M. Quin, Portadown; William Simpson, Cullybrackey; William J. Turner, Cambridge; Andrew P. Walker, Glasgow.

Second Examination.—Five Years' Course.—Andrew M'Creadie, Stranraer; Hugh M'Pherson, Oban; James R. Riddell, Glasgow; George Herbert A. Taylor, Ayrshire. Four Years' Course.—Patrick J. Calnan, County Cork; Robert A. Cameron, Glasgow; Martin Cleary, Mayo; Thomas J. Dickson, Buxton; Henry Dodd, Ayrshire; Arthur H. Field, Baildon; Emily F. Fitzsimons, Tralee; Thomas Gallacher, Port Glasgow; James Johnson, Lancashire; John A. E. A. Lavery, Birmingham; Algernon S. Marr, Glasgow; Thomas J. Perkins, Ballina; William G. Pritchard, Carnarvonshire; Samuel Rees, Carnarvonshire; Daniel L. Spillane, County Kerry; John R. N. Witherspoon, Durham.

Final Examination, and admitted Licentiates of the Three Coöperating Bodies.—Ebenezer Allan, Kilwinning; John T. Armstrong, Glasgow; Septimus Basham, Newcastle-on-Tyne; Margaret C. Dewar, Ceylon; Thomas Donald, Paisley; Henry B. Ellis, Liverpool; Hugh T. Galbraith, Londonderry; William James Gray, Edinburgh; Mary C. Horner, Glasgow; George Hill, Pollokshaws; Elias Jeffery, Falmouth; Martin F. Lyden, Edinburgh; John G. M'Coll, Rutherglen; Hugh W. Macdonald, Edinburgh; Lachlan Macdonald, Glasgow; Henry Marmion, Glasgow; James Henry Robertson, Glasgow; Rukhmabai (of Bombay), London; Margaret Georgina Todd, Edinburgh; George Edwin Watson, Sunderland.

ROYAL UNIVERSITY OF IRELAND.—**The following honours have been obtained at the First Examination in Medicine:—**

Honours in Botany.—First Class: Patrick Canning, John Murray, John F. Begley. Second Class: Neil J. Blaney, Walter V. Coppinger.

Honours in Zoology.—First Class: Neil J. Blaney, Patrick Canning. Second Class: John F. Begley, John Murray.

Honours in Chemistry.—First Class: Patrick Canning, Neil J. Blaney. Second Class: John F. Begley, John W. Brown, Peter J. Burke, John Murray.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS IN IRELAND.—CONJOINT SCHEME.—The following candidates have passed the Final Examination:—

J. B. C. Blatchley, A. W. N. Bowen, C. J. S. Cahill, T. J. Considine, E. A. Culligan, T. Fagan, T. A. Green, R. F. Harding, G. J. Houghton, T. C. Lauder, A. Leventon, W. E. P. Marriott, E. A. Meeke, E. J. Moore, J. C. Morgan, P. F. Morrissey, T. M. Morton, M. J. O'Brien, A. C. Seale, C. S. Kelly, R. E. Smith, H. G. Thompson, P. J. van Homrigh, J. R. Whilley, and W. A. Woodside.

Medicine.—E. A. Bourke, J. F. Bulfin, H. G. Dawson, J. Fleming, H. S. Laird, C. J. O'Gorman, and H. E. Stone.

Surgery.—J. P. Cassidy, M. A. Corcoran, B. Coyle, G. E. Creighton, N. F. Dawson, W. A. Gordon, A. M. Halligan, G. Martin, H. G. Martin, J. A. Neary, D. J. O'Brien, C. J. O'Gorman, W. Stratton, and J. H. Walsh.

Midwifery.—J. A. Beaumont, C. A. Black, J. F. Bulfin, R. Coffey, G. E. Creighton, H. Flemming, A. M. J. Halligan, E. J. Hogan, G. Martin, H. G. Martin, P. J. McHale, J. A. Neary, C. J. O'Gorman, and J. H. Walsh.

Ophthalmology.—C. A. Black, R. Coffey, M. A. Corcoran, B. Coyle, G. Creighton, H. G. Dawson, J. Flemming, A. M. Halligan, George Martin, H. G. Martin, J. Neary, D. J. O'Brien, E. A. Isaac Stubbs, and J. H. Walsh.

Forensic Medicine and Hygiene.—E. A. Bourke, M. J. Cuffe, J. Flemming, H. S. Laird, and C. J. O'Gorman.

FOREIGN UNIVERSITY INTELLIGENCE.—***Michigan (Ann Arbor University)*: **Dr. J. P. McMurrach of Cincinnati has been appointed to the Professorship in place of the late Dr. M. Ford.**—***New York (Policlinic)*: **Dr. J. R. Goffe has been appointed to the Professorship of Gynæcology; (*Post-graduate School*): Dr. F. Valk has been appointed Professor of Ophthalmology; Dr. F. Förster, Professor of Gynæcology; and Dr. B. Farquhar Curtis, Professor of Surgery.**—***Philadelphia (Jefferson Medical College)*: **Dr. S. M. Smith has been appointed Professor of Otology; Dr. W. J. Hearn, Professor of Clinical Surgery; and Dr. E. P. Davis, Professor of Clinical Midwifery.**—***St. Petersburg (Military Medico-Chirurgical Academy)*: **Dr. G. J. Turner has been recognised as *privat-docent* in Surgery.**

VACCINATION GRANT.—Mr. Thomas R. MacDonald, M.B., C.M. Glasg., has been awarded a Government grant for efficient and successful vaccination.

MEDICAL MAGISTRATE.—Mr. Francis Hepworth, M.R.C.S., of Eccles, has been placed on the Commission of the Peace for that borough.

THE HOVE SANITARY DEPARTMENT.—The proposed reorganisation of the health department of the town of Hove was once more under discussion at a meeting of the commissioners last week. The General Purposes Committee, which had had the arrangement of the details, advised the commissioners to ask the Local Government Board's approval of the following scheme: the appointment of a medical officer of health at a salary of £150 per annum, and of a head sanitary inspector at £170 per annum, with uniform. If the required sanction is received the committee ask to be allowed "to arrange with the medical officer of health and the head sanitary inspector for their resignation." This was stated by the chairman to be "purely a friendly arrangement," made to comply with the requirements of the Local Government Board. At present the total salaries in the department are £473 12*s.*; under the new system, which, in addition to the officers referred to, provides for a clerk and three assistants at specified salaries, the total will be £638. Under the new proposals, however, one-half of the salaries of the medical officer of health and of the head sanitary inspector will be borne by the county council. Thus the total cost to the town for salaries under the new *régime* will be £478 only. The commissioners, after a short discussion, confirmed the proceedings of the committee, and adopted their recommendations.

THE SANITARY CONGRESS AT LIVERPOOL.—The prompt manner in which the organising committee of the Congress and Exhibition of the Sanitary Institute has drawn up its preliminary programme augurs well, we hope, for the success of the gathering. The inaugural address will be delivered by the President of the Congress, Sir Francis Sharp Powell, Bart., M.P., in the large theatre of University College on Monday, Sept. 24th, and the formal opening of the exhibition will take place on the same day. On Tuesday, Sept. 25th, the real work of the Congress will begin, and conferences will be held on sanitary and other matters pertaining to public health. Mr. Charles E. Paget will preside over the Medical Officers of Health Congress, and Mr. Francis Vacher will act as President of the Sanitary Inspectors' Conference. Dr. George Blundell Longstaff of the London County Council will lecture to the Congress in University College. On Wednesday and Thursday the members of the Sanitary Science and Preventive Medicine Section will meet under the presidency of Dr. E. E. Klein. Dr. Thomas Stevenson, scientific analyst to the Home Office, will occupy the president's chair in the section of Chemistry, &c., which will meet on Friday, and Sir James Crichton Browne will deliver a lecture to working men on the evening of the same day. The arrangements for the excursions, which form a prominent feature of these gatherings, are being rapidly completed, and upon the whole the Congress promises to be a decided success.

Parliamentary Intelligence.

NOTES ON CURRENT EVENTS.

The Hours of Railway Signalmen.

WE are glad to note that attention is being given to the number of hours signalmen are employed by railway companies. In some cases the Board of Trade have taken action, and the hours of the men have been reduced; but from questions put by Mr. Channing and Mr. Dodd to the Secretary of the Board of Trade it would seem that there is still need for improvement. The subject is one of very great importance, and the Board of Trade would do well to exercise their full powers in regard to the matter.

HOUSE OF COMMONS.

THURSDAY, AUG. 9TH.

The University of London Commission.

In reply to Sir Albert Rollit, Mr. Acland said that for some time the report of the University of London Commission had been under consideration. The Government were anxious to deal with the matter, but he was afraid nothing could be done in the way of legislation during what remained of the present session.

TUESDAY, AUG. 14TH.

The Case of Dr. Herz.

Replying to a question by Mr. Jeffreys, the Home Secretary said he could express no opinion as to the legality of the continued detention

of Dr. Herz under the warrants issued in January, 1893. It was a question of law, and he (Mr. Asquith) intended to take the opinion of the law officers on the subject. Dr. Herz could test the matter by an application to the English courts if he were advised that anything was illegal which had happened under his further detention.

Medical Examinations for Army Candidates.

Mr. Bartley was informed that a full statement of the conditions required for army candidates might be obtained from the War Office. With that statement before him any qualified surgeon would be able to inform candidates whether they would be likely to pass the medical examination.

The Aldershot Water-supply.

Mr. Bartley also put a question to the Secretary of State for War with reference to the supply of drinking-water for the troops at Aldershot, and was informed that the supply was excellent and ample. There were notices on certain pumps to the effect that the water obtained from them was to be used for washing purposes only.

Diseases of Animals Bill.

On the motion for the third reading of this Bill, Mr. Chaplin wished amendments to be inserted with the object of making it obligatory on the Board of Agriculture to order the slaughter at the port of landing of all animals arriving from abroad.—Sir W. Harcourt protested, stating that the object of the Bill was to assist the agricultural interests throughout the country. If Mr. Chaplin would not withdraw his opposition, the order for the third reading would have to be discharged and the Bill withdrawn, which was eventually done after some discussion.

WEDNESDAY, AUG. 15TH.

Plumbers' Registration Bill.

The order for the second reading was discharged and the Bill withdrawn.

THURSDAY, AUG. 16TH.

The Plague at Hong-Kong.

In answer to Mr. Webster, who wished to know whether any steps had been taken, or were practical, to recognise the gallant services of the 1st Battalion, Shropshire Light Infantry (late 53th Regiment), performed during the continuance of the plague at Hong-Kong, Mr. Woodall, in the absence of Mr. Campbell-Bannerman, replied that 8 officers and over 300 men of the Shropshire Light Infantry and detachments of the Royal Artillery and the Royal Engineers had volunteered to assist the civil authorities at Hong-Kong in cleansing and disinfecting houses in which cases of plague had occurred. Of these volunteers one officer, Captain Vesey, and five men were attacked by the plague, and he regretted to say that Captain Vesey and one of the men died. The Commander-in-Chief's high appreciation of the services of these men had already been made known to the officer commanding, and a copy of a despatch from the Governor of Hong-Kong had been received expressing appreciation of the services rendered on this occasion. He was sure that the House and the country would join in admiration of this fresh instance of the gallantry and devotion which had always distinguished Her Majesty's soldiers.

The Chelsea Hospital Inquiry.

Answering a question put by Captain Naylor-Leyland, Mr. Woodal said that the Secretary of State for War had not received the report of the Committee on Chelsea Hospital, but it was understood that it would be submitted to him in a few days, and it would be published in due course.

IN COMMITTEE.

Medical Men and the Scottish Local Government Bill.

The Scottish Local Government or Parish Councils Bill, which some time ago formed the subject of discussion by a Special Grand Committee, was last week considered in its amended form by the House of Commons itself. No attempt was made on this occasion to interfere with the position on the new Local Government Board assigned by the framers of the measure to a registered medical practitioner, although proposals were put forward, and without success, to strengthen the Board by the addition of two members specially acquainted with the administration of the Poor-law in Scotland. A long debate took place upon an amendment by Mr. MacGregor providing that medical officers to parish councils should not be liable to dismissal without the right of appeal to the Local Government Board. Mr. MacGregor said he considered it only fair to an honourable profession that it should have this protection. Under the existing law an inspector of the poor, a sanitary inspector, and other officers of the parochial board enjoyed this right of appeal, and he thought that at the very least a medical officer, subject as he was to capricious dismissal, should be placed in the same position. He found that the present Board of Supervision reported in favour of this proposal, saying "that the Board, in the public interest, and in the interest of medical officers, would be glad if these officers were not subject to capricious or unjustifiable dismissal by parochial boards."—Sir George Trevelyan said he was afraid they could not give to the opinion of the Board of Supervision more than its due weight, although that was very considerable. They must consider the question on its merits, and likewise in connexion with the time at which it was brought forward. He must own that he came rather prepossessed against any provision restricting the powers of the parish councils as against those of the existing parochial boards. This power of dealing directly, and without reference to any superior body, with their medical officer was possessed by the parochial boards, and he must own that he thought the parish councils would be at least equally able to exercise it. As to the merits of the question, he had no doubt that the proposal of the hon. member would meet with acceptance among medical men and the friends of the medical profession, but there was something to be said on the other side. In the case of the medical officer of health of a great district he had administrative work, and it was comparatively easy to see whether that administrative work was done properly, and if he failed to do it properly it was comparatively easy for the county council who employed him to bring a specific complaint to the Board of Supervision and ask that he should be removed from his office. Such was the case, too, with an inspector of poor. But things were different in the case of the medical man who attended the poor of a parish. It might very well be that the board responsible for the care of the poor knew certain things about the medical man which could not form a subject of definite complaint. They might know that he was careless and listless, or he might turn out a man difficult to get on with, or there might be something against his character. In such circumstances it surely would be hard that a board should not be able to pass from one medical officer to another without going to Edinburgh with a complaint, bringing serious charges against him. How many members of that House had not changed from one medical man to another without having to formulate any special complaint against him, but simply because they had some reason for want of confidence in him? If private individuals possessed this advantage, surely it was a strong thing to say that it should be denied to the community. He had this feeling in the case of schoolmasters. He had always thought it would be a serious thing for a School Board if it were not able in the last resort to get rid of a schoolmaster with whom it found it impossible to get on in respect of some defect of character, and he thought it would be a very serious burden to lay upon a parish council to say that it could not transfer the care of the poor of the community from one medical man to another without formulating a specific complaint against him which would stand the test of the examination of a department in Edinburgh with an appeal to London. He sympathised with the desire of his hon. friend, but he was not prepared at this time to make so great a change in the Poor-law of Scotland.—Mr. Graham Murray, in supporting the amendment, said that if this right of appeal were granted they would have a better tenure and probably get a better class of medical men for the work.—Mr. Cochrane also spoke in support of the amendment. He emphasised the risk to which medical men were exposed of capricious and unjustifiable dismissal, especially in small communities, and, answering Sir George Trevelyan's point about carelessness, said that if a man were found to be careless then that could be made the subject of a formal complaint, and if the complaint were well founded he had no doubt the Local Government Board would support the parish council. The alteration in the law was not considerable, yet it was one which he felt certain would be popular both in the House of Commons and throughout the country, because everybody was anxious that a good class of medical men should be attracted to these important appointments.—Mr. Johnston said he had long felt that medical officers connected with Poor-law administration did not receive the treatment to which they were entitled, and he desired to support this amendment. He had been told they were to have a Local Government Bill for Ireland next year, and no doubt it would follow the lines of this Bill. He was very sure that in Ireland, if medical officers were subject to dismissal without the right of appeal, they would come in for very harsh treatment in some parts of the country.—This closed the debate, and in the division which followed the amendment was negatived by 97 votes to 36.

BOOKS, ETC., RECEIVED.

CROSBY LOCKWOOD & SON, Ludgate-hill, London, E.C.

The Sanitary Arrangements of Dwelling Houses. By A. J. Wallis-Tayler, C.E. 1894. pp. 196.

The Water-supply of Towns, and the Construction of Waterworks. By W. K. Burton, A.M.Inst.C.E. To which is appended a Paper on the Effects of Earthquakes on Waterworks. By Professor J. Milne, F.R.S. Illustrated. 1894. pp. 304.

CHURCHILL, J. & A., New Burlington-street, London.

Guy's Hospital Reports. Vol. l. 1893. With Index from vol. i. (1836) to vol. l. (1893). Series 3, vol. XXV. 1894.

DAY BROTHERS, Sidmouth.

The English Riviera: A Guide to Sidmouth. By Neil Macvean, M.A., and L. Williams, M.B., C.M., F.R.Met.S. 1894. pp. 96. Price 1s.

JARROLD & SONS, Warwick-lane, London, E.C.

Sunrise-Land: Rambles in Eastern England. By Mrs. Alfred Berlin ("Vera"). 1894. pp. 345.

OLIVER & BOYD, Edinburgh, and SIMPKIN, MARSHALL & Co., London.

The Insanity of Over-exertion of the Brain; being the Morison Lectures delivered before the Royal College of Physicians of Edinburgh, session 1894. By J. Batty Tuke, M.D., F.R.C.P., F.R.C.S.Eng. Illustrated. pp. 66. Price 6s.

STEINHEIL, G., Rue Casimir-Delavigne, Paris.

Précis de Clinique Thérapeutique. Par le Dr. A. F. Plicque. 1894. pp. 592.

Vade-Mecum du Praticien. Diagnostic et Traitement des Maladies Internes. Par le Dr. F. Roux. 1894. pp. 391.

Enteric Fever in Infancy; by W. B. Noyes, M.D., New York; reprint (Trow Directory Printing Co., New York, 1894).—Bibliographie der Klinischen Helminthologie; von Dr. F. Ch. Huber (J. F. Lehmann, München, 1894).—The Case against Diggleism at the London School Board (Alexander and Shepheard, London, E.C., 1894); price 1s.—Sonderabdruck aus Der Aerztliche Praktiker; redakteur, Dr. Med. Seidel, Berlin (G. Lüdeking, in Hamburg, 1894).—Report on Dry Cells of the Obach and E.C.C. Types; by Professor Andrew Jamieson, M.Inst.C.E., F.R.S.E. (Siemens Brothers and Co., Queen Anne's-gate, Westminster, S.W., 1894).—The Leaven of Science; by William Osler, M.D., F.R.C.P. Lond.; reprint from University Medical Magazine, June, 1894; Pennsylvania.—Science Progress, August, 1894 (the Scientific Press, Strand, London).—The Natural History of Plants; by Kerner and Oliver; Part 4 (Blackie & Son, London); price 2s. 6d. net.—The Arena; August, 1894 (Gay & Bird, Chandos-street, Strand, London); price 2s.—Protection or Free Trade; by Henry George (S. M. Burroughs, Holborn-viaduct, E.C.).—The Liverpool Medico-Chirurgical Journal; July, 1894 (H. K. Lewis, Gower-street, London); price 3s. 6d.—The Jewish Method of Slaughter compared with other Methods from the Humanitarian, Hygienic, and Economic Points of View; by J. A. Dembo, M.D. (Kegan Paul, Trench, Trübner & Co., London, 1894); price 2s. 6d. net.—Separat-Abdruck aus der Zeitschrift für Heilkunde, 15 Band (H. Kornfeld, Berlin, N.W. 6, 1894).—Puerperal Infection considered

from a Bacteriological Point of View, with special reference to the Question of Auto-Infection; by J. Whitridge Williams, M.D.; reprint (Lea Brothers & Co., Philadelphia).—Jahrbuch für Kinderheilkunde und Physische Erziehung; Neue Folge, 38 Band; 2 u. 3 Hefte; 6 August, 1894 (B. G. Teubner, Leipzig, 1894).—Observations on Bending of the Neck of the Femur in Adolescence, with particular reference to the Diagnosis and Significance of the Affection; by R. Whitman, M.D., M.R.C.S.; reprint (D. Appleton & Co., New York).—The National Society for the Prevention of Cruelty to Children: Justice to Children. A Ten Years' Review. Being the Report for 1893-94 (Henry Good & Son, London).—Sonderabdruck aus der Allgemeinen Medicinischen Central-Zeitung No. 60 (Oscar Coblentz, Berlin, 1894).—La Flandre Médicale. 2 Août, 1894 (Ad. Hoste, Gand).—On Puerperal Fevers; by Lovell Drage, M.D. Oxon. (Adlard & Son, London, 1894).—Ueber das Eisen in Diätetischer Hinsicht; von Professor Dr. R. Kobert (Georg Thieme, Liepzig, 1894).—Ueber Bilharziakrankheit; von Dr. L. Rütimeyer (C. Sallmann, Basel und Leipzig, 1894).—The Journal of Physiology, August 13th, 1894 (C. J. Clay & Sons, Ave Maria-lane, London); price 11s. net.—Eine neue Theorie über die Ursachen einiger Nervenkrankheiten, insbesondere der Neuritis und der Tabes; von L. Edinger (Breitkopf und Härtel, Leipzig).—Magazines for August: Sunday at Home, Leisure Hour, Boy's Own Paper, Boy's Out-door Games and Recreations, Girl's Own Paper, Girl's Own Out-door Book (Religious Tract Society), The Strand, The Picture Magazine (Companion to the Strand Magazine), Million, Tit-Bits.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ABRAHAM, PHINEAS S., B.Sc. Lond., M.D. Dub., F.R.C.S. Irel., has been appointed Dermatologist to the West London Hospital.

ALLARDICE, WM. C., M.B., C.M. Glasg., has been appointed House Physician to the North Staffordshire Infirmary and Eye Hospital, Stoke-upon-Trent.

CATTLEY, ROBT., M.B., C.M. Edin., D.P.H. Camb., has been appointed Medical Officer of Health, York.

COWAN, J. S., M.B., M.S. Edin., has been appointed Medical Officer for the No. 3 Sanitary District of the Bromyard Union.

DEWAR, J. A., M.D. Edin., L.R.C.S., has been reappointed District Parochial Medical Officer, Arbroath.

DICKSON, EMILY W., M.B., B.Ch., B.A.O. Irel., F.R.C.S., L.M., L.R.C.P. Irel., has been appointed Gynæcologist to the Richmond, Whitworth, and Hardwicke Government Hospitals.

DOWNES, HAROLD, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Junior House Surgeon to the Branch Hospital of the Seamen's Hospital Society, Victoria and Albert Docks, E.C.

HARVEY, ROBT. J., L.R.C.P., L.R.C.S., L.M. Irel., has been appointed House Surgeon to the Richmond, Whitworth, and Hardwicke Government Hospitals.

LEVICK, H. D., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Assistant Medical Officer at the Infirmary of the Whitechapel Union.

LEWIS, C. E. M., M.A., M.B., B.C. Cantab., has been appointed House Surgeon to the West Norfolk and Lynn Hospital, King's Lynn.

MACLURE, HERBERT W., M.B., B.S., B.A. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed by the London County Council Medical Officer to the Metropolitan Fire Brigade District No. 6.

MORRIS, C. D., L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer of Health for the Staines Rural Sanitary District.

MOYNIHAN, B. G. A., M.B. Lond., B.S., L.R.C.P., has been appointed Honorary Demonstrator of Anatomy at the Yorkshire College.

O'SULLIVAN, A. C., M.B., F.T. College Dubl., has been appointed Pathologist and Bacteriologist to the Richmond, Whitworth, and Hardwicke Government Hospitals.

PHILLIPS, PERCY C., M.R.C.S., L.R.C.P., has been appointed Resident Medical Officer of the East London Hospital for Children, and Dispensary for Women, Shadwell, vice Ware, resigned.

POLLOCK, E. S., M.B., B.Ch. B.A.O. Dubl., has been appointed Medical Officer for the Cheriton Fitzpaine B Sanitary District of the Crediton Union.

POSTLETHWAITE, F., M.R.C.S., has been appointed Honorary Visiting Surgeon to the Cornwall Convalescent Home for Men, vice Whitworth.

POWNE, LESLIE, M.R.C.S., has been appointed Medical Officer for the Cheriton Fitzpaine A Sanitary District of the Crediton Union.

ROYDEN, WM., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Rural Sanitary District of the East and West Flegg Incorporation, vice Waller, resigned.

STEPHEN, JAS., M.D., C.M. Aberd., has been reappointed Parochial Medical Officer, Peterhead.

TEW, J. S., M.D. Durh., B.S., M.R.C.S., D.P.H. Camb., has been reappointed Medical Officer of Health for the Basford Rural Sanitary District.

TIMS, H. W. MARETT, M.D., M.Ch. Edin., has been appointed Demonstrator of Anatomy at the Westminster Hospital Medical School, vice P. de Santi.

TURNER, GEORGE, M.B. Camb., D.P.H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Hertford and Ware Joint Hospital.

WANNAN, W. A., L.R.C.P., L.R.C.S., has been reappointed District Parochial Medical Officer, Arbroath.

WHITE, J. A. T., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Hatfield Sanitary District of the Dunmow Union.

YOUNG, M., M.B., C.M. Edin., has been appointed Medical Officer for the Borough of Brighouse.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BRISTOL HOSPITAL FOR SICK CHILDREN AND WOMEN.—House Surgeon. Salary £100 per annum, with rooms and attendance.

COUNTY ASYLUM, Prestwich, Manchester.—Pathologist. Salary £200 per annum, with board, residence, and washing.

LAMBETH WORKHOUSE.—Assistant Medical Officer and Dispenser for the Workhouse, Renfrew-road, Lower Kennington-lane. Salary £100 per annum, with board, apartments, and washing. Applications to the Clerk, Guardians' Board-room and Offices, Brook-street, Kennington-road, S.E.

LEWISHAM UNION.—Dispenser at the new Infirmary, High-street, Lewisham, S.E. Salary £80 per annum and dinner and tea daily. Applications to the Clerk to the Guardians, Union Offices, 285, High-street, Lewisham, S.E.

LIVERPOOL DISPENSARIES.—House Surgeon for the North Dispensary and a Head Surgeon for the South Dispensary. Salary in each case £200 per annum, with apartments, board, and attendance. Also Assistant Surgeon for the South Dispensary. Salary £80 the first year and £90 per annum afterwards, with apartments, board, and attendance. Applications to the Secretary, Leith Offices, Moorfields, Liverpool.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Assistant Resident Medical Officer for six months. Board, washing, and residence in the hospital provided, and an honorarium of five guineas on satisfactory completion of the term of appointment.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon. Salary £100 for the first year, with an increase of £10 the second year, and board and residence.

MEMORIAL HOSPITAL, Jarrow-on-Tyne.—House Surgeon for three years. Progressive salary of £130, £150, and £170 respectively, and to reside and board free in the hospital.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Physician.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer for six months. Salary £30 per annum, with board, attendance, and washing.

ROYAL ORTHOPÆDIC HOSPITAL, 297, Oxford-street, London.—Resident House Surgeon. Salary £100 per annum, with residence and partial board.

ROYAL HOSPITAL FOR SICK CHILDREN, Glasgow.—Assistant House Surgeon. Salary £30, with board and washing.

ST. ASAPH UNION.—Medical officer for the Abergele district of the Union. Salary £70 per annum, which will include all remuneration especially awarded for operations and services and Midwifery cases. Vaccination fee given for public vaccination within the district of 2s. or 3s. per case, according to distance. Applications to the Clerk, St. Asaph.

ST. BARTHOLOMEW'S HOSPITAL, London.—Ophthalmic Surgeon.

ST. LUKE'S HOSPITAL, London, E.C.—Clinical Assistant for six months. Board and residence provided.

TOWNSHIP OF TOXTETH PARK.—Senior Assistant Medical Officer for the Workhouse and Infirmary. Salary £100 per annum, with board, washing, and apartments. Applications to the Clerk to the Guardians, 15, High-park-street, Liverpool.

Births, Marriages, and Deaths.

BIRTHS.

BURTON.—On Aug. 9th, at Hosie Villa, 15, Vernon-road, Edgbaston, Birmingham, the wife of Surgeon-Major F. H. M. Burton, M.D., Army Medical Staff, of a son.

STARK.—On Aug. 1st, at 6, Broad-street, Oxford, the wife of Dr. M. Dugald Stark, of a daughter.

STEVENSON.—On Aug. 9th, at the Crescent, Teignmouth, S. Devon, the wife of William Dymes Stevenson, M.R.C.S., of a daughter.

WAINWRIGHT.—On Aug. 9th, at 103, Sandgate-road, Folkestone, the wife of Lennox Wainwright, M.D., L.R.C.P., M.R.C.S., L.S.A., of a son.

MARRIAGES.

BRAITHWAITE—M'CULLAGH.—On Aug. 9th, at Trinity Wesleyan Church, Macclesfield, by the Rev. H. H. M'Cullagh, B.A., assisted by the Rev. C. B. M'Cullagh, B.A. (brothers of the bride), Charles Bernard Braithwaite, M.B. Lond., M.R.C.S., L.R.C.P. Lond., of Golcar, near Huddersfield, to Kate, third daughter of the Rev. T. M'Cullagh of Macclesfield.

PARKHURST—BELL.—On Aug. 8th, at St. Margaret's, Ipswich, Rodic Parkhurst, M.B., C.M. Edin., only son of Rodic Parkhurst, late of G.P.O., London, to Lilian Christina Bell, youngest daughter of the late John Ross Bell, Colombo, Ceylon.

DEATHS.

BEATON.—On Aug. 8th, at Ryde, Isle of Wight, Daniel Beaton, M.D., L.R.C.S., aged 89.

CORFE.—On Aug. 14th, at 16, York-villas, Brighton, George Corfe, M.D., in his 85th year.

LIDDON.—On Aug. 12th, at Silver Street House, Taunton, Mary Burn, wife of Edward Liddon, M.D., aged 62.

RAKE.—On Aug. 10th, at the Old House, Fordingbridge, Salisbury, Thomas Beaven Rake, M.R.C.S., aged 68.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Aug. 16th, 1894.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia. in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Aug. 10	29·88	S.W.	61	59	117	71	58	...	Raining
,, 11	30·11	N.W.	58	54	108	68	54	·27	Cloudy
,, 12	30·09	N.W.	65	59	115	71	58	...	Cloudy
,, 13	29·93	N.W.	62	58	107	71	58	·13	Cloudy
,, 14	29·80	W.	65	62	122	81	59	·02	Cloudy
,, 15	29·56	S.W.	63	58	115	70	58	...	Cloudy
,, 16	29·72	N.W.	59	56	93	63	54	·11	Cloudy

Notes, Short Comments & Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

PUBLISHER'S NOTICE.

IN order to facilitate the work of reference to the volumes of THE LANCET, we have arranged to publish duplicate copies of the Index to each half-yearly volume in a form in which they may be subsequently filed or bound together. Those of our subscribers who may wish to be supplied with loose copies can obtain the same (without extra charge) on making application to the Publisher of THE LANCET.

A MEDICAL PARTY IN THE HOUSE OF COMMONS.

THE *World* announces the formation of a medical party in the House of Commons, and says that it has been suggested that a Public Health Bills' Consolidation Act would be a good starting point for the efforts of such a party. We are not so sure about this proposal. The influence of medical men will be greater in proportion as they avoid all appearance of party or partisan action. Public Health Bills and Bills restricting the sale of drugs are in the interest of the public, and the medical members should regard them as being outside all party questions. Otherwise we should be charged with interested views. We should be glad to see many more members of our profession in Parliament—but not to make a new party.

THE FEEDING OF BOYS AT SCHOOLS.

To the Editors of THE LANCET.

SIRS,—I have read with interest the address of Dr. W. Howship Dickinson, President of the Section of Diseases of Children, at the late meeting of the British Medical Association. Amongst other points touched upon by him, whilst speaking of the insufficient way in which children are fed, he says: "Schoolboys, or the like, who dine in the middle of the day ought to have a little meat by way of supper." I am the father of a boy who is at present a pupil at one of the large public schools, at which the lads have meat once a day—that is, at their midday meal; but the worst of it is, this meat is often tainted, and this not only in the summer term, but also during the cooler months of the year. I have verified this fact from three other boys in the school besides my own. Now, if the one meat meal of the day is at times bad, it is hard on the lads. They, as can well be supposed, are chary about openly complaining, as they think in the future they would be in as bad odour as the meat viands at times are. I have a nephew who goes to another large public school, and he informed me the same thing as regards the meat exists there. As a remedy I think it would be well if an inspector or inspectors were appointed to visit the different large schools at unexpected intervals, who would examine and taste the food and also make inquiries amongst the pupils, just the same as the Commissioners in Lunacy inspect asylums and the Prison Commissioners our gaols; or perhaps, better still, if THE LANCET sent a commission of inquiry to the different schools, like they did some years ago into the condition of our workhouses. I think some of the facts they would gather about the feeding of boys would be startling. I am an old public school boy myself, and can vouch for the fact that the meat when I was at school was often not in good condition in the summer and autumn months. I can also add that but for pocket-money and hampers of food sent from home to supplement the school fare I should have been chronically hungry, to say the very least.

I am, Sirs, yours truly,

Aug. 14th, 1894. HAUT GOÛT.

*** The quality of the diet at our large public schools is a subject of whose importance we are fully aware. In times not long past the feeding was distinctly bad in many of these institutions—coarse, ill-served, and not too plenteous. We are no advocates of "molly-coddling," but there is nothing gained by the exact and unnecessary reverse. But things have greatly changed, and all the modern developments are towards further change, while the system of inspection suggested by our correspondent is one hardly likely to meet with universal approval.

"THE MOST EFFECTUAL LOCAL ANÆSTHETIC."

To the Editors of THE LANCET.

SIRS,—In answer to "M.D." (THE LANCET, Aug. 11th, 1894, p. 363) you say that "there are no known precautions or safeguards which can render the use of cocaine free from risk." It may interest your correspondent to know that, according to Dr. Gauthier, who published a paper last year on this subject in the *Gazette des Hôpitaux*, the addition of a small quantity of nitro-glycerine apparently diminishes the danger of the injection and gives good results in practice. He uses the following preparation: Cocain. mur., 0·2; one per cent. solution of nitro-glycerine, grs. x.; aq. destill., 10·0.

I am, Sirs, yours truly,

Harley-street, W., Aug. 13th, 1894. J. KESER.

THE MIDLAND HOMŒOPATHIC INSTITUTE.

A CORRESPONDENT has forwarded to us the following remarkable directions from a bottle of medicine sent out by the Midland Homœopathic Institute:—

These Directions to be Carefully Read.

SHAKE THE BOTTLE.

M..... Tablespoonful to be taken every 2 hours immediately after

Every Violent Cough, Severe Pain, } if any.
Attack of Diarrhœa or of Vomiting }

The Medicine to be kept Well Corked, in the Dark, and in a Cool Place.

Report immediately to the Pharmacy any unfavourable change in the Patient, as although *Homœopathic Medicines*, when dispensed with due care and experience, *are absolutely harmless*, unexpected symptoms will sometimes manifest themselves, rendering it necessary for the attendance of a *Doctor* at the Patient's residence, *who is alone empowered to give a Certificate of Death:* in any case the Proprietor will be glad to know the result of Treatment.

The Pharmacy is open from 8.30 A.M. till 10 P.M. Consultation Hours 10 till 9 daily.

MIDLAND HOMŒOPATHIC AND MAGNETO-ELECTRIC INSTITUTE.
(Consulting Room attached.)
31 & 32, Camp Hill, and 118 & 119, Aston-road, Birmingham.
Proprietors: Ashman and Drummond.

Is there any want of charity in pointing out that the harmlessness of the medicines and the necessity of having someone handy to sign death certificates hardly dovetail?

PORTRAITS OF DISTINGUISHED MEDICAL MEN.

Subscriber (Belfast).—There is no one place where engraved portraits of medical worthies can be obtained, though there are several photographers who publish portraits of medical men. Of the three eminent men mentioned by our correspondent we are not aware that there are engraved portraits in existence; but any photographer could probably obtain photographs of them.

SHAM HOSPITAL NURSES.

REFERRING to our annotation upon the usurpation by the lay young woman of the professional nurse's garb, our friend *Mr. Punch* writes as follows:—

"There's no doubt my new costume is *very* becoming. I like the idea of the cape, and the apron is just perfect, while the little bonnet suits me to a T. Met cousin Fred, who said it was 'fetching,' and that 'they wanted some of my sort at the hospitals.' I said I thought the patients had good enough nurses at present; he replied 'he didn't mean the patients—he meant the doctors.' Of course I couldn't stand the drudgery of a nurse's life; but that's no reason why I shouldn't appropriate the uniform, is it?

"Walking down street. Met another nurse—a real one, I suppose. She stared, turned red, and then looked horribly offended. I believe she must have made some sign to me that I didn't understand. Are Nurses Freemasons, I wonder? Quite a secret society, it seems. Really that sort of thing oughtn't to be allowed. It makes things so awkward for the impost—the imitators, I mean.

"Just got home after *dreadful* incident! I was in a Bayswater square, when suddenly a man driving round a corner in a cart got upset, and was pitched on to the road close to me. A small crowd gathered immediately, and evidently expected *me* to help. One man shouted 'Hi! Come and bind up his head, Miss!' And his head was actually bleeding! I couldn't do anything except feel awfully inclined to faint, and then the mob began to hiss and jeer! Somebody said I must know how to render 'first aid to the injured,' and if I didn't come quick the man would bleed to death. I was so frightened I ran away, and the mob ran after me, and I had to take shelter in a shop and ask the shopman to explain to the crowd that I was not really a nurse at all. Then they used dreadful expressions, and I had to be got out by a back way. I don't think the costume is half as becoming as it seemed this morning; I'm going to sell it as a 'cast-off garment.' Lucky for me it wasn't a torn-off garment!"

A CORRESPONDENT in the *Daily Telegraph* also calls attention to this new phase of the sham hospital nurse question. A girl answered an advertisement in which an invalid sought the services of a "ladylike, musical, well-educated young person as companion at the seaside." No salary was offered, but applicants were assured that they would not be required to perform any duties of a menial character. In response to a request for further particulars the girl was informed—"You would attend me when, twice a day, I go out in my bath-chair, and would have to find and wear the uniform of a hospital nurse." By this means the advertiser hopes to be able to pose, apparently, as an interesting invalid, requiring the assiduous attention of a certificated nurse. Truly Mrs. Wititterly was not overdrawn.

Mr. Fred. J. Thomson.—The two sexes do not differ in this respect.

"TREATMENT OF DIPHTHERIA BY INSUFFLATIONS AND TABLOIDS OF SULPHITE OF MAGNESIUM."

To the Editors of THE LANCET.

SIRS,—During the months of November and December, 1893, you were good enough to insert several letters of mine on the above subject. Among the replies one of your correspondents, Dr. Gowan, made the very sensible remark that the treatment should be given a fair trial. More than six months have now elapsed, and I feel sure that some of my fellow practitioners have done so. I claim from them, through THE LANCET, a verdict as to its efficacy from their results. If you will again open your pages to a discussion on the subject, I believe that you will confer a benefit on mankind in general, and most certainly a favour on

Yours truly,

BROWNLOW R. MARTIN, M.B.

Shaftesbury-road, W., Aug. 14th, 1894.

NEWSPAPER PUFFS.—THE BROMPTON SHOOTING CASE.

OUR attention has been directed to a paragraph in the *West London Press*, describing the wound sustained by Mr. Sydney Bennett, of Egerton-gardens; the administration of an anæsthetic; the examination and extraction by Dr. Felix Vinrace of Birmingham; the bullet so flattened and twisted as to be with difficulty extracted, the shock of the operation, the amount of hæmorrhage, &c. Such paragraphs are not seemly. The operator should at least express his disapproval.

IF *A Country G.P.* will submit his manuscript, the subject shall receive our attention.

"CHICKEN-POX IN ADULTS."

To the Editors of THE LANCET.

SIRS,—Referring to Mr. Margrave's communication (THE LANCET, March 10th, 1894) *re* "Chicken-pox in Adults," in the month of April last I was consulted by a gentleman aged twenty-two for an eruption appearing upon his face and neck, accompanied with headache and a slight rise of temperature. The next day upon visiting him the eruption was most marked, appearing upon the chest, back, and arms. There was no difficulty in diagnosing the case as one of chicken-pox. Subsequently the servant, aged eighteen, had an attack. The origin of the first case was unknown.—I am, Sirs, yours faithfully,

Toronto, July 19th, 1894. CHAS. A. HODGETTS.

AN INDICTMENT OF BROWN-LEATHER BOOTS.

A CORRESPONDENT encloses us a cutting from a paper (the name of the paper is not given) which runs as follows:—

"The brown or tan shoe has ceased to be fashionable for women. Perhaps medical testimony against the artificially-coloured leather has had something to do with cutting short the run of the brown shoe. Some doctors maintain that the reddish-brown tan cannot be obtained without the use of very poisonous chemicals, and when the leather is wet these poisons are absorbed by the pores of the foot."

Our correspondent is doubtful as to the justice of this indictment of brown-leather boots, and we are certain that he does well to remain sceptical.

A.M.D.—It is the fact that a great annual saving was effected by the establishment of the station hospital system in India. If our correspondent will turn to the columns of last week's *Broad Arrow* he will find a paragraph on the subject in which reference is made to a correspondence that took place with the India Office, and it was acknowledged that charge pay for army medical officers was a just claim. The saving to the Indian Government was in a great degree attributable to economical changes in the medical service which that measure—viz., the introduction of station hospitals—brought about.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (1 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.).

TUESDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1.30 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY.—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), Gt. Northern Central (2.30 P.M.), King's College (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.).

THURSDAY.—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (2 P.M.), Chelsea (2 P.M.), Soho-square (2 P.M.), North West London (2 P.M.).

FRIDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), Cancer (2 P.M.).

SATURDAY.—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

During the week marked copies of the following newspapers have been received:—*Folkestone Chronicle, Isle of Wight Herald, Hull News, Bath Argus, Bradford Observer, Newcastle Daily Leader, South Wales Daily News, East Anglian Daily Times, Scarborough Post, Huddersfield Daily Chronicle, Carmarthen Journal, Nottingham Guardian, Liverpool Daily Post, Eccles Advertiser, Architect, City Press, Scotsman, Yorkshire Post, Leeds Mercury, Builder, Times of India, The Morning, Bristol Mercury, Citizen, Pioneer Mail, Hertfordshire Mercury, Bedfordshire Times, Ilkeston Pioneer, Sanitary Record, Weekly Free Press and Aberdeen Herald, Local Government Chronicle, Reading Mercury, West Middlesex Standard, Local Government Journal, West London Press and Chelsea News, Dundee Advertiser, Surrey Advertiser, Worcester Daily Times, Musical Opinion and Music Trade Review, Science Siftings, Oxford Chronicle, Oldham Daily Standard, Liverpool Mercury, Bath Chronicle, Torquay Directory, Brighton Argus, Dumfries Courier, Falkirk Herald, Hereford Times, Derbyshire Times, Brighton Gazette, Galignani Messenger, Grays and Tilbury Standard, Veterinary Record, Leek Times, Nursing Record, Bombay Gazette, Le Courrier de la Presse (Paris), Sheffield and Rotherham Independent, Evesham Journal and Four Shires Advertiser, &c. &c.*

Communications, Letters &c. have been received from—

A.—Association of British Postal Medical Officers, London, Secretary of; August, London; A. T., London.

B.—Dr. C. B. Braithwaite, Bishop Auckland; Mr. W. Brickel, Longton; Mr. J. Blaikie, Newcastle; Mr. W. F. Brook, Swansea; Mr. J. P. Bullar, Southampton; Mr. H. Draper Bishop, Weston-super-Mare; Mr. M. R. Brandreth, London; Mr. W. Brown, Victoria; Mr. W. H. Brown, Leeds; Mr. E. Bousfield, London; Mr. G. A. H. Barton, North Devon; Mr. C. Birchall, Liverpool; Mr. R. W. Brimacombe, Bristol; Mrs. Bowen, Little Haven; Miss Brook, Huddersfield; Messrs. J. Baker and Co., Clifton; Messrs. R. and J. Beck, London; Messrs. Blackie and Son, London; Messrs. Blondeau et Cie., London; Bristol Hospital for Women, Secretary of; British Medical Association, London, Librarian of.

C.—Dr. W. J. Collins, London; Mr. H. Cayley, Southampton; Mr. W. S. Crawford, Liverpool; Mr. R. T. Cæsar, Salop; Mr. T. Cooke, London; Messrs. Crossley, Moir and Co., London; Messrs. W. and R. Chambers, Edinburgh; Messrs. Crosby Lockwood and Son, London; Climate, London.

D.—Mr. H. A. Dickson, London; Messrs. W. Dawson and Sons, London; Messrs. Down Bros., London; *Devon Gazette*, Manager of; *Deutsche Medicinische Wochenschrift*, Editor of.

E.—Mr. H. M. Earle, Sangwal, India; Messrs. Eason and Son, Dublin; E. B. H., Chesterfield; E. P. O., London.

F.—Sir J. Fayrer, London; Mr. G. Foster, Yorks; Mr. A. Fournet, London; Messrs. Ferris and Co., Bristol.

G.—Dr. J. F. Gemmel, Lancaster; Mr. T. W. Garstang, Knutsford; Messrs. Giddy and Giddy, London.

H.—Sir G. Humphry, Cambridge; Sir F. Seymour Haden, Hants; Dr. Bertram Hunt, Grindelwald; Mr. J. R. Hammond, Deal; Mr. C. A. Hankey, London; Mr. T. L. Horner, Devonport; Mr. G. D. Hunter, London; Mr. T. Garrett Horder, Cardiff; Mr. Hebb, London; Mr. A. H. Haynes, Bristol; Mr. J. Heywood, Manchester; Mr. W. G. Hash, Bedford; H. B., London.

J.—Messrs. W. and A. K. Johnston, Edinburgh; Jarrow Memorial Hospital, Secretary of.

K.—Dr. J. Keser, London; Dr. J. Kippax, Accrington; Mr. B. Kühn, London; Mr. Thomas Keith, London; Messrs. N. Kepple and Son, Bristol.

L.—Dr. J. J. Lynch, Walsall; Dr. A. W. D. Leahy, Calcutta; Dr. V. E. H. Lindesay, London; Mr. S. Leonard, London; Mr. H. Lane, Bath; Messrs. Laidlaw and Sandeman, Galashiels; Messrs. Lee and Nightingale, Liverpool; Messrs. Lee and Martin, Birmingham; Liquor Carnis Co., London, Manager of.

M.—Dr. H. Mallins, Watton; Dr. J. Murphy, Sunderland; Dr. C. F. Moore, Dublin; Sir John Monckton, London; Mr. L. Matherly, Bath; Mr. E. W. G. Masterman, Jerusalem; Mr. C. D. Morris, Middlesex; Mr. A. G. S. Mahomed, Bournemouth; Mr. A. B. McMaster, Portstewart; Mr. R. A. Macleod, Edinburgh; Mr. E. S. Medcalf, Hove; Mr. A. W. MacIlwaine, Hull; Mr. R. Martin, London; Messrs. F. Macfarlan and Co., London; Midland Railway Co., Derby, General Manager of; *Medico-Surgical Bulletin*, Editor of, New York; M.B., Edinburgh.

N.—Dr. E. Neumann, Vienna; Mr. G. F. H. Nailton, Bishop Northern, London.

O.—Mr. E. Owen, London; Messrs. Oppenheimer, Son and Co., Ltd., London.

P.—Mr. J. Pickles, Gainsboro'; Messrs. W. Porteous and Co., Glasgow; Messrs. Pickardt and Co., London; Messrs. Parkins and Gotto, London; Prestwich County Asylum, Secretary of; P. W., London; Practitioner, co. Durham.

R.—Dr. Rentoul, Liverpool; Dr. G. Rankin, Warwick; Mr. Leslie Roberts, Liverpool; Messrs. Robertson and Scott, Edinburgh; Royal College of Science, London, Registrar of; Resident, London.

S.—Dr. E. H. W. Swete, Worcester; Dr. T. D. Savill, London; Dr. E. J. Slade-King, Ilfracombe; Brig.-Surg.-Lt.-Col. W. F. Stevenson, Netley; Mr. A. W. Sheffiss, London; Mr. S. R. Schofield, London; Messrs. Street Bros., London; Messrs. Squire and Sons, London; St. Asaph Union, Clerk of; Sheffield School of Medicine, Secretary of.

T.—Dr. S. G. Toller, London; Dr. Dawson Turner, Edinburgh; Dr. A. Trombetto, Milan; Mr. Fred. J. Thomson, London.

V.—V. A., London; Viator, London.

W.—Dr. E. Willoughby, London; Dr. L. A. Weatherly, Bath; Mr. F. H. Weekes, York; Mr. J. E. Williams, Stamford; Mr. A. P. Williams, New Swindon; Mr. C. Williams, London; Mr. J. G. Williams, Stamford; Messrs. J. Wyeth and Bro., London; Messrs. Wright, Layman and Umney, London; Messrs. Welford and Sons, London; Woodhall Spa Sanatorium, Lincoln, Secretary of; Westminster Hospital Medical School, Dean of.

X.—X. Y. Z., London.

Y.—Yorkshire College, Leeds, Secretary of.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. H. Appleton, Bournemouth; Mr. R. R. Anderson, Carmarthen; Mr. J. E. Appleton, Great Shelford; A. Z., Birmingham; Ajax, Leeds.

B.—Mr. M. N. Byrn, Hull; Mr. H. R. H. Bigg, London; Mr. G. S. Birt, Great Yarmouth; Bootle Borough Hospital, Clerk of; Bolton, London; Bonus, London.

C.—Dr. H. E. Crook, Margate; Mr. W. F. A. Clowes, Coggeshall; Coppice, The, Notts, Secretary of; Coventry and Warwickshire Hospital, Secretary of; Cortex, London; Cantor, London; Confidence, London.

D.—Mr. J. W. Davies, Ebbw Vale; Messrs. A. De St. Dalmas and Co., Leicester; Deaconesses' Institute, London, Superintendent of; D. J., London.

F.—Dr. F., Brighton; F. R. S., London.

G.—Dr. A. S. Greenway, Llandrindod; Mr. J. Guest, Chippenham; Mr. W. Gilyard, Bradford; Mr. R. Gravatt, London; Mr. W. B. Griffith, Coedpoeth; Great Northern Spa, Harrogate, Town Clerk of; Glamorganshire Infirmary, Cardiff, Secretary of; G. E., London; Dr. G. L., Uptonpark; Gerald, London; G. F. W., London.

H.—Dr. J. Housley, Retford; Dr. H. J. Hardwicke, St. Leonards-on-Sea; Mr. T. W. Hawkins, Taunton; Mr. W. Hartford, Kingstown; Messrs. Hill and Hoggan, Glasgow; Messrs. Humphreys, London; Dr. H., London.

J.—Dr. C. H. L. Johnston, St. John's, N.B.; Mr. D. Jones, Llanfachraeth; Juno, London; J. A. P., London.

K.—King's Co. Medical Society, Brooklyn, N.Y., Librarian of.

L.—Mr. R. H. Lucas, Bury St. Edmunds; Mr. W. C. Lewis, Bath; Mr. F. Lewis, Newport, Mon.; Lancaster County Asylum, Clerk of; Leeds Hospital for Women, Secretary of; L. A. B., London; Locum, Dover.

M.—Dr. T. H. Morton, Sheffield; Messrs. Macmillan and Co., London; M.O.H., London; Maitland, London; Medicus, London; Medicus, Worthing; Medicus, Birmingham; Melros, London; Medicus, Norwich; M.D., London.

N.—Newport and Monmouthshire Infirmary, Secretary of; Nimrod, London; Northern, London.

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